

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.02.96
Test oil : ISO 4113

Part no. : 0 460 426 249
Pump designation : VE6/12F1250R498-6

Customer-spec. information

Customer : CUMMINS
Motor : 6 BTAA 5.9B
Power KW : 133.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 109

Opening pressure
bar : 207
Tolerance bar : 3

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 840

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 1,4
Tolerance mm : ±0,02
Outlet : D

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 850
Aneroid pressure
hPa : 1000

Setting mm : 1.5
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 850
Aneroid pressure
hPa : 1000

Setting hPa : 5.8
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 850
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 86.5
Tolerance
cm³/1000 strokes : 0.5
Spread
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 5.0
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 60.0
Tolerance
cm³/1000 strokes : 0.5
Spread
cm³/1000 strokes : 5.0
Shutoff solenoid
Volt : 12
Check tolerance
cm³/1000S. : 6.0

Check tolerance cm ³ /1000s.	:	5.0	Aneroid pressure hPa	:	1000
IDLE SETTING					
Rated speed rpm	:	350	SV travel mm	:	0.7
Del. quantity cm ³ /1000 strokes	:	15.0	Tolerance mm	:	0.4
Tolerance cm ³ /1000 strokes	:	2.0	Check tolerance mm	:	0.7
Shutoff solenoid Volt	:	12	Shutoff solenoid Volt	:	12
Spread cm ³ /1000 strokes	:	5.5	Rated speed rpm	:	450
Check tolerance cm ³ /1000s.	:	7.0	SV travel mm	:	2.4
FULL-LOAD SPEED REGULATION					
Rated speed rpm	:	1380	Tolerance mm	:	0.5
Pressure hPa	:	1000	Check tolerance mm	:	0.7
Del. quantity cm ³ /1000 strokes	:	68.5	Shutoff solenoid Volt	:	12
Tolerance cm ³ /1000 strokes	:	3.0	KSB/AFB Volt	:	12
Shutoff solenoid Volt	:	12	SUPPLY PUMP PRESSURE CHARACTERISTIC		
STARTING FUEL DELIVERY					
Rated speed rpm	:	100	Rated speed rpm	:	1250
Del. quantity cm ³ /1000 strokes	:	95.0	Aneroid pressure hPa	:	1000
Tolerance cm ³ /1000 strokes	:	15.0	Supply pump pressure bar	:	7.2
Shutoff solenoid Volt	:	12	Tolerance hPa	:	0.3
<hr/> INJECTION-PUMP TEST SPECIFICATIONS					
TIMING DEVICE CHARACTERISTIC					
Rated speed rpm	:	1250	Shutoff solenoid Volt	:	12
Aneroid pressure hPa	:	1000	OVERFLOW QUANTITY		
SV travel mm	:	2.4	Rated speed rpm	:	500
Tolerance mm	:	0.4	Overflow quantity ccm/10s	:	63.8
Check tolerance mm	:	0.7	Tolerance ccm/10s	:	22.2
Shutoff solenoid Volt	:	12	Check tolerance ccm/10s	:	22.2
Rated speed rpm	:	750			

Shutoff solenoid		Check tolerance	
Volt	: 12	cm ³ /1000S.	: 4.0
Rated speed rpm	: 1250	Shutoff solenoid	
Aneroid pressure		Volt	: 12
hPa	: 1000	Rated speed rpm	: 1250
Overflow quantity		Aneroid pressure	
ccm/10s	: 83.3	hPa	: 1000
Tolerance		Del. quantity	
ccm/10s	: 27.7	cm ³ /1000 strokes	: 85.5
Check tolerance		Tolerance	
ccm/10s	: 27.7	cm ³ /1000 strokes	: 1.5
Shutoff solenoid		Check tolerance	
Volt	: 12	cm ³ /1000S.	: 3.5
DELIVERY AND BREAKAWAY CHARACTERISTIC			
Rated speed rpm	: 1380	Shutoff solenoid	
Aneroid pressure		Volt	: 12
hPa	: 1000	Rated speed rpm	: 1100
Del. quantity		Aneroid pressure	
cm ³ /1000 strokes	: 68.5	hPa	: 1000
Tolerance		Del. quantity	
cm ³ /1000 strokes	: 3.0	cm ³ /1000 strokes	: 88.0
Check tolerance		Tolerance	
cm ³ /1000S.	: 6.0	cm ³ /1000 strokes	: 1.5
Shutoff solenoid		Check tolerance	
Volt	: 12	cm ³ /1000S.	: 3.5
Rated speed rpm	: 1465	Shutoff solenoid	
Aneroid pressure		Volt	: 12
hPa	: 1000	Rated speed rpm	: 850
Del. quantity		Aneroid pressure	
cm ³ /1000 strokes	: 27.5	hPa	: 1000
Check tolerance		Del. quantity	
cm ³ /1000S.	: 10.0	cm ³ /1000 strokes	: 86.5
Shutoff solenoid		Tolerance	
Volt	: 12	cm ³ /1000 strokes	: 0.5
Rated speed rpm	: 1530	Check tolerance	
Aneroid pressure		cm ³ /1000S.	: 3.0
hPa	: 1000	Shutoff solenoid	
Del. quantity		Volt	: 12
cm ³ /1000 strokes	: 1.5	MECHANICAL SHUTOFF	
Tolerance		Rated speed rpm	: 1250
cm ³ /1000 strokes	: 1.5	Aneroid pressure	
Check tolerance		hPa	: 1000
cm ³ /1000S.	: 1.5	Del. quantity	
Shutoff solenoid		cm ³ /1000 strokes	: 1.5
Volt	: 12	Tolerance	
Rated speed rpm	: 600	cm ³ /1000 strokes	: 1.5
Aneroid pressure		Spread	
hPa	: 500	cm ³ /1000 strokes	: 5.0
Del. quantity		Check tolerance	
cm ³ /1000 strokes	: 78.5	cm ³ /1000S.	: 1.5
Tolerance		Spread	
cm ³ /1000 strokes	: 0.5	cm ³ /1000 strokes	: 5.0
		Shutoff solenoid	
		Volt	: 12

ELECTR. SHUTOFF
CONTROL LEVER, IDLE STOP

Rated speed rpm : 350
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5
Spread
cm3/1000 strokes : 5.0

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 350
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Spread
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 1.5
Spread
cm3/1000 strokes : 5.0

IDLE DELIVERY

Rated speed rpm : 410
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 240
Del. quantity
cm3/1000 strokes : 70.0
Tolerance
cm3/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 130
Del. quantity
cm3/1000 strokes : 100.0

Tolerance
cm3/1000 strokes : 20.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,7
Tolerance mm : $\pm 0,1$
Dimension KF mm : 6,4
Tolerance mm : $\pm 0,2$
MS1 dimension mm : 1,3
Tolerance mm : $+0,15/-0,1$

CONTROL LEVER POSITION
SET

Control lever
position YA mm : 34,8..38,8
Control lever
position YB mm : 41,7..48,3

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 24.11.95
Test oil : ISO 4113

Part no. : 0 460 494 390
Pump designation : VE4/9F2100R508-1

Customer-spec. information

Customer : FIAT-AUTO
Motor : M710 HT19.D
Power KW : 66.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.75

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1000
Aneroid pressure hPa : 1000
Setting mm : 2.8
Tolerance mm : 0.1
Shutoff solenoid Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1000
Aneroid pressure hPa : 1000
Setting hPa : 4.8
Tolerance hPa : 0.3
Shutoff solenoid Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1500
Aneroid pressure hPa : 1000
Del. quantity cm³/1000 strokes : 52.0
Tolerance cm³/1000 strokes : 0.5
Spread cm³/1000 strokes : 2.5
Check tolerance cm³/1000S. : 2.5
Shutoff solenoid Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 600
Del. quantity cm³/1000 strokes : 40.5
Tolerance cm³/1000 strokes : 0.5
Shutoff solenoid Volt : 12
Check tolerance cm³/1000S. : 2.5

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 800
Del. quantity cm³/1000 strokes : 4.5
Tolerance cm³/1000 strokes : 1.0

Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2400
Pressure hPa : 1000
Del. quantity
cm³/1000 strokes : 26.0
Tolerance
cm³/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 65.0
Tolerance
cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

LOAD-DEPENDENT START OF DELIVERY SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : -10.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : -0.2
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : -0.8
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2100
Aneroid pressure
hPa : 1000
Tolerance mm : 0.3
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
SV travel mm : 5.4
Tolerance mm : 0.3
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2100
Aneroid pressure
hPa : 1000
Supply pump
pressure bar : 7.8
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
Supply pump
pressure bar : 6.2
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2100
Aneroid pressure
hPa : 1000
Overflow quantity
ccm/10s : 152.7
Tolerance
ccm/10s : 41.6
Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 12

Rated speed rpm	: 750	Shutoff solenoid	: 12
Aneroid pressure hPa	: 1000	Rated speed rpm	: 2100
Overflow quantity ccm/10s	: 111.1	Aneroid pressure	: 1000
Tolerance ccm/10s	: 22.2	Del. quantity	: 51.5
Check tolerance ccm/10s	: 22.2	cm3/1000 strokes	: 1.5
Shutoff solenoid		Check tolerance	: 2.5
Volt	: 12	Shutoff solenoid	: 12
DELIVERY AND BREAKAWAY CHARACTERISTIC			
Rated speed rpm	: 2400	Rated speed rpm	: 750
Aneroid pressure		Del. quantity	: 41.0
hPa	: 1000	cm3/1000 strokes	: 1.0
Del. quantity		Tolerance	: 1.0
cm3/1000 strokes	: 26.0	Shutoff solenoid	: 12
Tolerance		Volt	: 12
cm3/1000 strokes	: 3.0	Rated speed rpm	: 750
Check tolerance		Aneroid pressure	: 1000
cm3/1000S.	: 5.0	hPa	: 1000
Shutoff solenoid		Del. quantity	: 54.0
Volt	: 12	cm3/1000 strokes	: 1.5
Rated speed rpm	: 2700	Check tolerance	: 2.5
Aneroid pressure		Shutoff solenoid	: 12
hPa	: 1000	Volt	: 12
Del. quantity		Rated speed rpm	: 1500
cm3/1000 strokes	: 3.5	Aneroid pressure	: 1000
Shutoff solenoid		hPa	: 1000
Volt	: 12	Del. quantity	: 52.0
Rated speed rpm	: 2500	Tolerance	: 0.5
Aneroid pressure		cm3/1000 strokes	: 2.0
hPa	: 1000	Check tolerance	
Del. quantity		cm3/1000S.	: 2.0
cm3/1000 strokes	: 15.0	Shutoff solenoid	: 12
Tolerance		Volt	: 12
cm3/1000 strokes	: 4.0	ELECTR. SHUTOFF	
Check tolerance		CONTROL LEVER, IDLE STOP	
cm3/1000S.	: 5.0	Rated speed rpm	: 450
Shutoff solenoid		Del. quantity	: 1.5
Volt	: 12	cm3/1000 strokes	: 1.5
Rated speed rpm	: 750	Tolerance	: 1.5
Aneroid pressure		cm3/1000 strokes	: 1.5
hPa	: 450	Check tolerance	
LDA/		cm3/1000S.	: 1.5
HBA stroke mm	: 6.7		
Del. quantity			
cm3/1000 strokes	: 47.5		
Tolerance			
cm3/1000 strokes	: 0.5		
Check tolerance			
cm3/1000S.	: 2.5		

Spread
cm³/1000 strokes : 5.0

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 450
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Spread
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 1.5
Spread
cm³/1000 strokes : 5.0

RESIDUAL QUANTITY

Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 5.5
Tolerance
cm³/1000 strokes : 1.5
Shutoff solenoid
Volt : 12

IDLE DELIVERY

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 7.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 4.5
Shutoff solenoid
Volt : 12

CHECKING LOAD-DEPENDENT
START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : -12.0
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 4.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : -0.8
Tolerance
cm³/1000 strokes : 0.1
Check tolerance
cm³/1000S. : 0.1
Shutoff solenoid
Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : 5.0
Tolerance
cm³/1000 strokes : 1.0
Check tolerance
cm³/1000S. : 1.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1500
Tolerance mm : 0.3
Check
tolerance mm : 0.4
Shutoff solenoid
Volt : 12

EXHAUST-GAS RECIRCULATION

Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 19.5
Tolerance
cm³/1000 strokes : 1.0
Check tolerance
cm³/1000S. : 2.0
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 38.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 220
Del. quantity
cm³/1000 strokes : 70.0

Tolerance
cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/
HBA stroke mm : 6.7
Dimension K mm : 3,3
Tolerance mm : ±0,1
Dimension KF mm : 5,5
Tolerance mm : ±0,2
Dimension MS mm : 1,8
Tolerance mm : ±0,2

POTENTIOMETER
SET

1. measurement
voltage Volt : 5,0
1. measurement
voltage Volt : 1,85

MICROSWITCH
SET

: ARF 12,0

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.04.95
Test oil : ISO 4113

Part no. : 0 460 494 408
Pump designation : VE4/9F2100R508-2

Customer-spec. information
Customer : FIAT-AUTO
Motor : M710 HT19.D
Power KW : 66.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.75

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1000
Aneroid pressure hPa : 1000
Setting mm : 2.8
Tolerance mm : 0.1
Shutoff solenoid Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1000
Aneroid pressure hPa : 1000
Setting hPa : 4.8
Tolerance hPa : 0.3
Shutoff solenoid Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1500
Aneroid pressure hPa : 1000
Del. quantity cm³/1000 strokes : 52.0
Tolerance cm³/1000 strokes : 0.5
Spread cm³/1000 strokes : 2.5
Check tolerance cm³/1000S. : 2.5
Shutoff solenoid Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 600
Del. quantity cm³/1000 strokes : 40.5
Tolerance cm³/1000 strokes : 0.5
Shutoff solenoid Volt : 12
Check tolerance cm³/1000S. : 2.5

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 800
Del. quantity cm³/1000 strokes : 4.5
Tolerance cm³/1000 strokes : 1.0

Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2400
Pressure hPa : 1000
Del. quantity
cm³/1000 strokes : 26.0
Tolerance
cm³/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 65.0
Tolerance
cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

LOAD-DEPENDENT START OF DELIVERY SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : -10.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : -0.2
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : -0.8
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2100
Aneroid pressure
hPa : 1000
Tolerance mm : 0.3
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
SV travel mm : 5.2
Tolerance mm : 0.3
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2100
Aneroid pressure
hPa : 1000
Supply pump
pressure bar : 7.8
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
Supply pump
pressure bar : 6.2
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2100
Aneroid pressure
hPa : 1000
Overflow quantity
ccm/10s : 138.8
Tolerance
ccm/10s : 41.6

Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 12

Rated speed rpm	:	750	Shutoff solenoid		
Aneroid pressure			Volt	:	12
hPa	:	1000	Rated speed rpm	:	2100
Overflow quantity			Aneroid pressure		
ccm/10s	:	97.2	hPa	:	1000
Tolerance			Del. quantity		
ccm/10s	:	22.2	cm ³ /1000 strokes	:	51.5
Check tolerance			Tolerance		
ccm/10s	:	22.2	cm ³ /1000 strokes	:	1.5
Shutoff solenoid			Check tolerance		
Volt	:	12	cm ³ /1000S.	:	2.5
DELIVERY AND BREAKAWAY CHARACTERISTIC					
Rated speed rpm	:	2400	Shutoff solenoid		
Aneroid pressure			Volt	:	12
hPa	:	1000	Rated speed rpm	:	750
Del. quantity			Del. quantity		
cm ³ /1000 strokes	:	26.0	cm ³ /1000 strokes	:	41.0
Tolerance			Tolerance		
cm ³ /1000 strokes	:	3.0	cm ³ /1000 strokes	:	1.0
Check tolerance			Shutoff solenoid		
cm ³ /1000S.	:	5.0	Volt	:	12
Shutoff solenoid			Rated speed rpm	:	750
Volt	:	12	Aneroid pressure		
Rated speed rpm	:	2700	hPa	:	1000
Aneroid pressure			Del. quantity		
hPa	:	1000	cm ³ /1000 strokes	:	55.0
Del. quantity			Tolerance		
cm ³ /1000 strokes	:	3.5	cm ³ /1000 strokes	:	1.5
Shutoff solenoid			Check tolerance		
Volt	:	12	cm ³ /1000S.	:	2.5
Rated speed rpm	:	2500	Shutoff solenoid		
Aneroid pressure			Volt	:	12
hPa	:	1000	Rated speed rpm	:	1500
Del. quantity			Aneroid pressure		
cm ³ /1000 strokes	:	15.0	hPa	:	1000
Tolerance			Del. quantity		
cm ³ /1000 strokes	:	4.0	cm ³ /1000 strokes	:	52.0
Check tolerance			Tolerance		
cm ³ /1000S.	:	5.0	cm ³ /1000 strokes	:	0.5
Shutoff solenoid			Check tolerance		
Volt	:	12	cm ³ /1000S.	:	2.0
Rated speed rpm	:	750	Shutoff solenoid		
Aneroid pressure			Volt	:	12
hPa	:	450	ELECTR. SHUTOFF		
LDA/			CONTROL LEVER, IDLE STOP		
HBA stroke mm	:	6.7	Rated speed rpm	:	450
Del. quantity			Del. quantity		
cm ³ /1000 strokes	:	47.5	cm ³ /1000 strokes	:	1.5
Tolerance			Tolerance		
cm ³ /1000 strokes	:	0.5	cm ³ /1000 strokes	:	1.5
Check tolerance			Check tolerance		
cm ³ /1000S.	:	2.5	cm ³ /1000S.	:	1.5

Spread
cm³/1000 strokes : 5.0

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 450
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Spread
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 1.5
Spread
cm³/1000 strokes : 5.0

RESIDUAL QUANTITY

Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 3.0
Tolerance
cm³/1000 strokes : 1.5
Shutoff solenoid
Volt : 12

IDLE DELIVERY

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 7.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 4.5
Shutoff solenoid
Volt : 12

CHECKING LOAD-DEPENDENT
START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : -12.0
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 4.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : -0.8
Tolerance
cm³/1000 strokes : 0.1
Check tolerance
cm³/1000S. : 0.1
Shutoff solenoid
Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : 5.0
Tolerance
cm³/1000 strokes : 1.0
Check tolerance
cm³/1000S. : 1.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1500
Tolerance mm : 0.3
Check
tolerance mm : 0.4
Shutoff solenoid
Volt : 12

EXHAUST-GAS RECIRCULATION

Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 19.5
Tolerance
cm³/1000 strokes : 1.0
Check tolerance
cm³/1000S. : 2.0
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 35.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 220
Del. quantity
cm³/1000 strokes : 65.0

Tolerance
cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/
HBA stroke mm : 6.7
Dimension K mm : 3,3
Tolerance mm : ±0,1
Dimension KF mm : 5,5
Tolerance mm : ±0,2
Dimension MS mm : 1,2
Tolerance mm : ±0,2

POTENTIOMETER
SET

1. measurement
voltage Volt : 5,0
1. measurement
voltage Volt : 1,85

MICROSWITCH
SET

: ARF 12,0

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 18.07.95
Test oil : ISO 4113

Part no. : 0 460 404 077
Pump designation : VE4/10F2100R518

Customer-spec. information

Customer : IVECO-SOFIM
Motor : 8140.67.2200

TEST BENCH REQUIREMENTS**Calibrating-oil**

return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS**BEGINNING OF DELIVERY****Prestroke**

(as of UT) mm : 0,2
Tolerance mm : 0,02
Check
tolerance mm : 0,04

INJECTION PUMP SETTING VALUES**TIMING DEVICE TRAVEL**

Rated speed rpm : 1500

Setting mm : 5.0
Tolerance mm : 0.1
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1500

Setting hPa : 6.7
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : 43.0
Tolerance
cm³/1000 strokes : 0.5
Spread
cm³/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

IDLE SETTING

Rated speed rpm : 375
Del. quantity
cm³/1000 strokes : 14.0
Tolerance
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12
Spread
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000 strokes : 3.0

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2300
Del. quantity
cm³/1000 strokes : 29.0
Tolerance
cm³/1000 strokes : 2.0

Shutoff solenoid	
Volt	: 12
STARTING FUEL DELIVERY	
Rated speed rpm	: 100
Del. quantity	
cm ³ /1000 strokes	: 85.0
Tolerance	
cm ³ /1000 strokes	: 20.0
Shutoff solenoid	
Volt	: 12
LOAD-DEPENDENT START OF DELIVERY SETTING	
DELIVERY DIFFERENCE	
Rated speed rpm	: 1500
Del. quantity	
cm ³ /1000 strokes	: -22.0
Tolerance	
cm ³ /1000 strokes	: 1.0
Shutoff solenoid	
Volt	: 12
PRESSURE DIFFERENCE	
Rated speed rpm	: 1500
Del. quantity	
cm ³ /1000 strokes	: -0.2
Tolerance	
cm ³ /1000 strokes	: 0.1
Shutoff solenoid	
Volt	: 12
TIMING-DEVICE TRAVEL DIFFERENCE	
Rated speed rpm	: 1500
Del. quantity	
cm ³ /1000 strokes	: -0.5
Tolerance	
cm ³ /1000 strokes	: 0.1
Shutoff solenoid	
Volt	: 12
INJECTION-PUMP TEST SPECIFICATIONS	
TIMING DEVICE CHARACTERISTIC	
Rated speed rpm	: 1800
SV travel mm	: 6.9
Tolerance mm	: 0.3
Check tolerance mm	: 0.7

Shutoff solenoid	
Volt	: 12
Rated speed rpm	: 1150
SV travel mm	: 2.7
Tolerance mm	: 0.3
Check tolerance mm	: 0.7
Shutoff solenoid	
Volt	: 12
Rated speed rpm	: 2100
SV travel mm	: 7.3
Tolerance mm	: 0.4
Check tolerance mm	: 0.7
Shutoff solenoid	
Volt	: 12
Rated speed rpm	: 1500
SUPPLY PUMP PRESSURE CHARACTERISTIC	
Rated speed rpm	: 2100
Supply pump pressure bar	: 8.8
Tolerance hPa	: 0.3
Shutoff solenoid	
Volt	: 12
Rated speed rpm	: 600
Supply pump pressure bar	: 3.5
Tolerance hPa	: 0.3
Shutoff solenoid	
Volt	: 12
Rated speed rpm	: 400
OVERFLOW QUANTITY	
Rated speed rpm	: 2100
Overflow quantity ccm/10s	: 97.2
Tolerance	
ccm/10s	: 41.6
Check tolerance	
ccm/10s	: 41.6
Shutoff solenoid	
Volt	: 12
Rated speed rpm	: 600
Overflow quantity ccm/10s	: 63.8
Tolerance	
ccm/10s	: 22.2

Check tolerance
ccm/10s : 22.2
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2300
Del. quantity
cm³/1000 strokes : 29.0
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 6.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2400
Del. quantity
cm³/1000 strokes : 7.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2600
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 2100
Del. quantity
cm³/1000 strokes : 44.0
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 2.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 41.0
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 2.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 36.5
Tolerance
cm³/1000 strokes : 2.0

Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12
Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : 43.0
Tolerance
cm³/1000 strokes : 0.5
Check tolerance
cm³/1000S. : 2.0
Shutoff solenoid
Volt : 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 375
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 375
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5

IDLE DELIVERY

Rated speed rpm : 465
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5
Shutoff solenoid
Volt : 12

CHECKING LOAD-DEPENDENT START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1500

Del. quantity
cm³/1000 strokes : -23.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 4.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : -0.5
Tolerance
cm³/1000 strokes : 0.1
Check tolerance
cm³/1000S. : 0.1
Shutoff solenoid
Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : 1.0
Tolerance
cm³/1000 strokes : 1.0
Check tolerance
cm³/1000S. : 1.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1500
Tolerance mm : 0.4
Check
tolerance mm : 0.4
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 35.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 70.0
Tolerance
cm³/1000 strokes : 15.0

Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : -
Dimension KF mm : 5,8
Tolerance mm : ±0,2
Dimension MS mm : 1,8
Tolerance mm : ±0,1
KSB travel mm : 11,5

POTENTIOMETER SET

1. measurement
voltage Volt : 5,0
1. measurement
voltage Volt : 2,31

CONTROL LEVER POSITION SET

Control lever
position YA mm : 37,9..39,9
Control lever
position YB mm : 41,8..47,0

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 18.07.95
Test oil : ISO 4113

Part no. : 0 460 404 084
Pump designation : VE4/10F2100R518-1

Customer-spec. information

Customer : IVECO-SOFIM
Motor : 8140.67.2200

TEST BENCH REQUIREMENTS

Calibrating-oil

return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Prestroke

(as of UT) mm : 0,2
Tolerance mm : +0,02
Check tolerance mm : +0,04

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1500
Setting mm : 5.0
Tolerance mm : 0.1
Shutoff solenoid Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1500
Setting hPa : 6.7
Tolerance hPa : 0.3
Shutoff solenoid Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1500
Del. quantity cm³/1000 strokes : 43.0
Tolerance cm³/1000 strokes : 0.5
Spread cm³/1000 strokes : 3.0
Shutoff solenoid Volt : 12

IDLE SETTING

Rated speed rpm : 375
Del. quantity cm³/1000 strokes : 14.0
Tolerance cm³/1000 strokes : 2.0
Shutoff solenoid Volt : 12
Spread cm³/1000 strokes : 3.0
Check tolerance cm³/1000S. : 3.0

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2300
Del. quantity cm³/1000 strokes : 29.0
Tolerance cm³/1000 strokes : 2.0

Shutoff solenoid	Shutoff solenoid
Volt	Volt
STARTING FUEL DELIVERY	
Rated speed rpm	100
Del. quantity	
cm ³ /1000 strokes	85.0
Tolerance	
cm ³ /1000 strokes	20.0
Shutoff solenoid	
Volt	12
LOAD-DEPENDENT START OF DELIVERY SETTING	
DELIVERY DIFFERENCE	
Rated speed rpm	1500
Del. quantity	
cm ³ /1000 strokes	-22.0
Tolerance	
cm ³ /1000 strokes	1.0
Shutoff solenoid	
Volt	12
PRESSURE DIFFERENCE	
Rated speed rpm	1500
Del. quantity	
cm ³ /1000 strokes	-0.2
Tolerance	
cm ³ /1000 strokes	0.1
Shutoff solenoid	
Volt	12
TIMING-DEVICE TRAVEL DIFFERENCE	
Rated speed rpm	1500
Del. quantity	
cm ³ /1000 strokes	-0.5
Tolerance	
cm ³ /1000 strokes	0.1
Shutoff solenoid	
Volt	12
INJECTION-PUMP TEST SPECIFICATIONS	
TIMING DEVICE CHARACTERISTIC	
Rated speed rpm	1800
SV travel mm	6.9
Tolerance mm	0.3
Check tolerance mm	0.7
Shutoff solenoid	
Volt	12
Shutoff solenoid	Shutoff solenoid
Volt	Volt
OVERFLOW QUANTITY	
Rated speed rpm	2100
Overflow quantity	
ccm/10s	97.2
Tolerance	
ccm/10s	41.6
Check tolerance	
ccm/10s	41.6
Shutoff solenoid	
Volt	12
Rated speed rpm	600
Overflow quantity	
ccm/10s	63.8
Tolerance	
ccm/10s	22.2

Check tolerance
ccm/10s : 22.2
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2300
Del. quantity
cm3/1000 strokes : 29.0
Tolerance
cm3/1000 strokes : 2.0
Check tolerance
cm3/1000S. : 6.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2400
Del. quantity
cm3/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2600
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 2100
Del. quantity
cm3/1000 strokes : 44.0
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 2.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 1000
Del. quantity
cm3/1000 strokes : 41.0
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 2.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Del. quantity
cm3/1000 strokes : 36.5
Tolerance
cm3/1000 strokes : 2.0

Check tolerance
cm3/1000S. : 3.0
Shutoff solenoid
Volt : 12
Rated speed rpm : 1500
Del. quantity
cm3/1000 strokes : 43.0
Tolerance
cm3/1000 strokes : 0.5
Check tolerance
cm3/1000S. : 2.0
Shutoff solenoid
Volt : 12

ELECTR. SHUTOFF
CONTROL LEVER, IDLE STOP

Rated speed rpm : 375
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 373
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5

IDLE DELIVERY

Rated speed rpm : 465
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5
Shutoff solenoid
Volt : 12

CHECKING LOAD-DEPENDENT
START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1500

Del. quantity
cm³/1000 strokes : -23.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 4.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : -0.5
Tolerance
cm³/1000 strokes : 0.1
Check tolerance
cm³/1000S. : 0.1
Shutoff solenoid
Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : 1.0
Tolerance
cm³/1000 strokes : 1.0
Check tolerance
cm³/1000S. : 1.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1500
Tolerance mm : 0.4
Check
tolerance mm : 0.4
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 35.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 70.0
Tolerance
cm³/1000 strokes : 15.0

Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : -
Dimension KF mm : 5,8
Tolerance mm : ±0,2
Dimension MS mm : 1,8
Tolerance mm : ±0,2
KSB travel mm : 11,5

CONTROL LEVER POSITION SET

Control lever
position YA mm : 37,9..39,9
Control lever
position YB mm : 41,8..47,0

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 11.07.95

Test oil : ISO 4113

Part no. : 0 460 414 112
Pump designation : VE4/11F1900R521-1

Customer-spec. information

Customer : IVECO-SOFIM
Motor : 8140.27.2560

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45
Tolerance °C : 1

Overflow

restriction mm : 0.75

Inlet press. bar : 0.35

Tolerance bar : 0.05

Test nozzle holde

assembly : 1 688 901 027

Opening pressure

bar : 250
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00

x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1400
Aneroid pressure hPa : 1200

Setting mm : 3.2
Tolerance mm : 0.1
Shutoff solenoid Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1400
Aneroid pressure hPa : 1200

Setting hPa : 7.5
Tolerance hPa : 0.3
Shutoff solenoid Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1000
Aneroid pressure hPa : 1200
Del. quantity cm³/1000 strokes : 47.0
Tolerance cm³/1000 strokes : 0.5
Spread cm³/1000 strokes : 4.0
Check tolerance cm³/1000S. : 4.5
Shutoff solenoid Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 550
Del. quantity cm³/1000 strokes : 26.5
Tolerance cm³/1000 strokes : 0.5
Shutoff solenoid Volt : 12
Check tolerance cm³/1000S. : 4.5

IDLE SETTING

Rated speed rpm : 300
Del. quantity cm³/1000 strokes : 10.0
Tolerance cm³/1000 strokes : 2.0
Shutoff solenoid Volt : 12
Spread cm³/1000 strokes : 6.0

Check tolerance
cm³/1000s. : 6.5

Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2100
Pressure hPa : 1200
Del. quantity
cm³/1000 strokes : 35.0
Tolerance
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 1750
Aneroid pressure
hPa : 1200

SV travel mm : 5.7
Tolerance mm : 0.3
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 1250
Aneroid pressure
hPa : 1200

SV travel mm : 1.7
Tolerance mm : 0.3
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

LOAD-DEPENDENT START OF DELIVERY SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1400
Pressure hPa : 1200
Del. quantity
cm³/1000 strokes : -22.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 1900
Aneroid pressure
hPa : 1200
SV travel mm : 5.7
Tolerance mm : 0.3
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1400
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : -0.2
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 1900
Aneroid pressure
hPa : 1200
Supply pump
pressure bar : 9.6
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1400
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : -0.8

Rated speed rpm : 800
Aneroid pressure
hPa : 1200
Supply pump
pressure bar : 4.6
Tolerance hPa : 0.3

Shutoff solenoid Volt	: 12	Del. quantity cm ³ /1000 strokes	: 1.5
OVERFLOW QUANTITY			
Rated speed rpm	: 1900	Tolerance cm ³ /1000 strokes	: 1.5
Aneroid pressure hPa	: 1200	Check tolerance cm ³ /1000S.	: 1.5
Overflow quantity ccm/10s	: 138.8	Shutoff solenoid Volt	: 12
Tolerance ccm/10s	: 41.6	Rated speed rpm	: 800
Check tolerance ccm/10s	: 41.6	Aneroid pressure hPa	: 450
Shutoff solenoid Volt	: 12	LDA/ HBA stroke mm	: 5.8
Rated speed rpm	: 800	Del. quantity cm ³ /1000 strokes	: 41.5
Aneroid pressure hPa	: 1200	Tolerance cm ³ /1000 strokes	: 0.5
Overflow quantity ccm/10s	: 97.2	Check tolerance cm ³ /1000S.	: 3.5
Tolerance ccm/10s	: 22.2	Shutoff solenoid Volt	: 12
Check tolerance ccm/10s	: 22.2	Rated speed rpm	: 1900
Shutoff solenoid Volt	: 12	Aneroid pressure hPa	: 1200
DELIVERY AND BREAKAWAY CHARACTERISTIC			
Rated speed rpm	: 2100	Del. quantity cm ³ /1000 strokes	: 48.0
Aneroid pressure hPa	: 1200	Tolerance cm ³ /1000 strokes	: 2.5
Del. quantity cm ³ /1000 strokes	: 35.0	Check tolerance cm ³ /1000S.	: 3.5
Tolerance cm ³ /1000 strokes	: 2.0	Shutoff solenoid Volt	: 12
Check tolerance cm ³ /1000S.	: 4.5	Rated speed rpm	: 800
Shutoff solenoid Volt	: 12	Del. quantity cm ³ /1000 strokes	: 28.5
Rated speed rpm	: 2000	Tolerance cm ³ /1000 strokes	: 2.5
Aneroid pressure hPa	: 1200	Check tolerance cm ³ /1000S.	: 3.5
Del. quantity cm ³ /1000 strokes	: 45.0	Shutoff solenoid Volt	: 12
Tolerance cm ³ /1000 strokes	: 4.0	Rated speed rpm	: 1750
Check tolerance cm ³ /1000S.	: 6.0	Aneroid pressure hPa	: 1200
Shutoff solenoid Volt	: 12	Del. quantity cm ³ /1000 strokes	: 48.0
Rated speed rpm	: 2300	Tolerance cm ³ /1000 strokes	: 2.5
Aneroid pressure hPa	: 1200	Check tolerance cm ³ /1000S.	: 3.5
		Shutoff solenoid Volt	: 12
		Rated speed rpm	: 800

Aneroid pressure	:	1200		
hPa	:	1200		
Del. quantity				CHECKING LOAD-DEPENDENT
cm ³ /1000 strokes	:	47.0		START OF DELIVERY
Tolerance				
cm ³ /1000 strokes	:	4.5		DELIVERY DIFFERENCE
Check tolerance				
cm ³ /1000S.	:	5.5		Rated speed rpm : 1400
Shutoff solenoid				Aneroid pressure
Volt	:	12		hPa : 1200
Rated speed rpm	:	1000		Del. quantity
Aneroid pressure				cm ³ /1000 strokes : -24.0
hPa	:	1200		Tolerance
Del. quantity				cm ³ /1000 strokes : 3.0
cm ³ /1000 strokes	:	47.0		Check tolerance
Tolerance				cm ³ /1000S. : 4.0
cm ³ /1000 strokes	:	0.5		Shutoff solenoid
Check tolerance				Volt : 12
cm ³ /1000S.	:	3.5		
Shutoff solenoid				TIMING-DEVICE TRAVEL DIFFERENCE
Volt	:	12		
				Rated speed rpm : 1400
				Aneroid pressure
				hPa : 1200
				Del. quantity
				cm ³ /1000 strokes : -0.8
				Tolerance
				cm ³ /1000 strokes : 0.1
				Check tolerance
				cm ³ /1000S. : 0.1
				Shutoff solenoid
				Volt : 12
				DELIVERY DIFFERENCE
				Rated speed rpm : 1400
				Aneroid pressure
				hPa : 1200
				Del. quantity
				cm ³ /1000 strokes : 1.5
				Tolerance
				cm ³ /1000 strokes : 1.5
				Check tolerance
				cm ³ /1000S. : 1.5
				Shutoff solenoid
				Volt : 12
				FULL-LOAD STOP CONTROL LEVER
				Rated speed rpm : 300
				Aneroid pressure
				hPa : 1200
				Del. quantity
				cm ³ /1000 strokes : 1.5
				Tolerance
				cm ³ /1000 strokes : 1.5
				Check tolerance
				cm ³ /1000S. : 1.5
				Shutoff solenoid
				Volt : 12
				IDLE DELIVERY
				Rated speed rpm : 425
				Aneroid pressure
				hPa : 1200
				Del. quantity
				cm ³ /1000 strokes : 1.5
				Tolerance
				cm ³ /1000 strokes : 1.5
				Check tolerance
				cm ³ /1000S. : 1.5
				Shutoff solenoid
				Volt : 12
				TIMING-DEVICE TRAVEL DIFFERENCE
				Rated speed rpm : 1400
				Aneroid pressure
				hPa : 1200
				Del. quantity
				cm ³ /1000 strokes : 0.4
				Tolerance mm
				Check
				tolerance mm : 0.4
				Shutoff solenoid
				Volt : 12
				START TRANSITION

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 22.0
Tolerance
cm³/1000 strokes : 8.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 200
Del. quantity
cm³/1000 strokes : 80.0
Tolerance
cm³/1000 strokes : 25.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/
HBA stroke mm : 5,8
Dimension K mm : K1
Dimension KF mm : 6,0
Tolerance mm : +0,2
MS1 dimension mm : 1,4
Tolerance mm : +0,15/-0,1
KSB travel mm : 7,0

CONTROL LEVER POSITION SET

Control lever
position YA mm : 37,9..39,9

Control lever
position YB mm : 44,1..49,9

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.11.95
Test oil : ISO 4113

Part no. : 0 460 414 134
Pump designation : VE4/11F1900R521-2

Customer-spec. information

Customer : IVECO-SOFIM
Motor : 8140.27.2585
Power KW : 76.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.75

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 027

Opening pressure
bar : 250
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1400
Aneroid pressure hPa : 1200
Setting mm : 3.4
Tolerance mm : 0.1
Shutoff solenoid Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1400
Aneroid pressure hPa : 1200
Setting hPa : 6.7
Tolerance hPa : 0.3
Shutoff solenoid Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1750
Aneroid pressure hPa : 1200
Del. quantity cm³/1000 strokes : 51.0
Tolerance cm³/1000 strokes : 0.5
Spread cm³/1000 strokes : 4.0
Check tolerance cm³/1000 strokes : 4.5
Shutoff solenoid Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 550
Del. quantity cm³/1000 strokes : 27.0
Tolerance cm³/1000 strokes : 0.5
Shutoff solenoid Volt : 12
Check tolerance cm³/1000 strokes : 4.5

IDLE SETTING

Rated speed rpm : 300
Del. quantity cm³/1000 strokes : 14.0
Tolerance cm³/1000 strokes : 2.0
Shutoff solenoid Volt : 12

Spread
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000s. : 6.5

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2050
Pressure hPa : 1200
Del. quantity
cm³/1000 strokes : 40.0
Tolerance
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 70.0
Tolerance
cm³/1000 strokes : 25.0
Shutoff solenoid
Volt : 12

LOAD-DEPENDENT START OF DELIVERY SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1400
Pressure hPa : 1200
Del. quantity
cm³/1000 strokes : -8.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1400
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : -0.2
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1400
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : -1.0
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 1600
Aneroid pressure
hPa : 1200
SV travel mm : 5.1
Tolerance mm : 0.3
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 1200
Aneroid pressure
hPa : 1200

SV travel mm : 1.6
Tolerance mm : 0.3
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 1900
Aneroid pressure
hPa : 1200

SV travel mm : 5.7
Tolerance mm : 0.3
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 1900
Aneroid pressure
hPa : 1200
Supply pump
pressure bar : 8.8
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 700
Aneroid pressure
hPa : 1200

Supply pump pressure bar	: 3.7	Aneroid pressure hPa	: 1200
Tolerance hPa	: 0.3	Del. quantity cm ³ /1000 strokes	: 1.5
Shutoff solenoid Volt	: 12	Tolerance cm ³ /1000 strokes	: 1.5
OVERFLOW QUANTITY			
Rated speed rpm	: 1900	Check tolerance cm ³ /1000S.	: 1.5
Aneroid pressure hPa	: 1200	Shutoff solenoid Volt	: 12
Overflow quantity ccm/10s	: 152.7	Rated speed rpm	: 800
Tolerance ccm/10s	: 41.6	Aneroid pressure hPa	: 500
Check tolerance ccm/10s	: 41.6	LDA/ HBA stroke mm	: 4.7
Shutoff solenoid Volt	: 12	Del. quantity cm ³ /1000 strokes	: 42.0
Rated speed rpm	: 700	Tolerance cm ³ /1000 strokes	: 0.5
Aneroid pressure hPa	: 1200	Check tolerance cm ³ /1000S.	: 3.5
Overflow quantity ccm/10s	: 111.1	Shutoff solenoid Volt	: 12
Tolerance ccm/10s	: 22.2	Rated speed rpm	: 1900
Check tolerance ccm/10s	: 22.2	Aneroid pressure hPa	: 1200
Shutoff solenoid Volt	: 12	Del. quantity cm ³ /1000 strokes	: 50.0
DELIVERY AND BREAKAWAY CHARACTERISTIC			
Rated speed rpm	: 2050	Tolerance cm ³ /1000 strokes	: 2.5
Aneroid pressure hPa	: 1200	Check tolerance cm ³ /1000S.	: 3.5
Del. quantity cm ³ /1000 strokes	: 40.0	Shutoff solenoid Volt	: 12
Tolerance cm ³ /1000 strokes	: 2.0	Rated speed rpm	: 800
Check tolerance cm ³ /1000S.	: 4.5	Del. quantity cm ³ /1000 strokes	: 30.0
Shutoff solenoid Volt	: 12	Tolerance cm ³ /1000 strokes	: 2.5
Rated speed rpm	: 2150	Check tolerance cm ³ /1000S.	: 3.5
Aneroid pressure hPa	: 1200	Shutoff solenoid Volt	: 12
Del. quantity cm ³ /1000 strokes	: 21.0	Rated speed rpm	: 1000
Check tolerance cm ³ /1000S.	: 6.0	Aneroid pressure hPa	: 1200
Shutoff solenoid Volt	: 12	Del. quantity cm ³ /1000 strokes	: 50.5
Rated speed rpm	: 2300	Tolerance cm ³ /1000 strokes	: 2.5
		Check tolerance cm ³ /1000S.	: 4.0
		Shutoff solenoid Volt	: 12

Rated speed rpm	:	700	Del. quantity		
Aneroid pressure	:	hPa	cm ³ /1000 strokes	:	35.0
	:	1200	Tolerance		
Del. quantity			cm ³ /1000 strokes	:	5.0
cm ³ /1000 strokes	:	54.0	Check tolerance		
Tolerance			cm ³ /1000S.	:	6.0
cm ³ /1000 strokes	:	4.5	Shutoff solenoid		
Check tolerance			Volt	:	12
cm ³ /1000S.	:	5.5			
Shutoff solenoid					
Volt	:	12			

Rated speed rpm	:	1750	Del. quantity		
Aneroid pressure	:	hPa	cm ³ /1000 strokes	:	51.0
	:	1200	Tolerance		
Del. quantity			cm ³ /1000 strokes	:	0.5
cm ³ /1000 strokes	:		Check tolerance		
Tolerance			cm ³ /1000S.	:	3.5
cm ³ /1000 strokes	:		Shutoff solenoid		
Check tolerance			Volt	:	12
cm ³ /1000S.	:				
Shutoff solenoid					
Volt	:				

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm	:	300	Del. quantity		
Del. quantity			cm ³ /1000 strokes	:	1.5
cm ³ /1000 strokes	:		Tolerance		
Tolerance			cm ³ /1000 strokes	:	1.5
cm ³ /1000 strokes	:		Check tolerance		
Check tolerance			cm ³ /1000S.	:	1.5
cm ³ /1000S.	:		Shutoff solenoid		
Shutoff solenoid			Volt	:	12
Volt	:				

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm	:	300	Del. quantity		
Del. quantity			cm ³ /1000 strokes	:	1.5
cm ³ /1000 strokes	:		Tolerance		
Tolerance			cm ³ /1000 strokes	:	1.5
cm ³ /1000 strokes	:		Check tolerance		
Check tolerance			cm ³ /1000S.	:	1.5
cm ³ /1000S.	:		Shutoff solenoid		
Shutoff solenoid			Volt	:	12
Volt	:				

IDLE DELIVERY

Rated speed rpm	:	450	Del. quantity		
Del. quantity			cm ³ /1000 strokes	:	1.5
cm ³ /1000 strokes	:		Tolerance		
Tolerance			cm ³ /1000 strokes	:	1.5
cm ³ /1000 strokes	:		Check tolerance		
Check tolerance			cm ³ /1000S.	:	1.5
cm ³ /1000S.	:		Shutoff solenoid		
Shutoff solenoid			Volt	:	12
Volt	:				

Rated speed rpm	:	250	Del. quantity	
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cm ³ /1000 strokes	:	35.0	Del. quantity		
Tolerance			cm ³ /1000 strokes	:	5.0
cm ³ /1000 strokes	:		Check tolerance		
Check tolerance			cm ³ /1000S.	:	6.0
cm ³ /1000S.	:		Shutoff solenoid		
Shutoff solenoid			Volt	:	12
Volt	:				

CHECKING LOAD-DEPENDENT START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm	:	1400	Del. quantity		
Aneroid pressure	:	hPa	cm ³ /1000 strokes	:	-12.0
	:	1200	Tolerance		
Del. quantity			cm ³ /1000 strokes	:	3.0
cm ³ /1000 strokes	:		Check tolerance		
Tolerance			cm ³ /1000S.	:	4.0
cm ³ /1000 strokes	:		Shutoff solenoid		
Check tolerance			Volt	:	12
cm ³ /1000S.	:				
Shutoff solenoid					
Volt	:				

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm	:	1400	Del. quantity		
Aneroid pressure	:	hPa	cm ³ /1000 strokes	:	-1.0
	:	1200	Tolerance		
Del. quantity			cm ³ /1000 strokes	:	0.1
cm ³ /1000 strokes	:		Check tolerance		
Tolerance			cm ³ /1000S.	:	0.1
cm ³ /1000 strokes	:		Shutoff solenoid		
Check tolerance			Volt	:	12
cm ³ /1000S.	:				
Shutoff solenoid					
Volt	:				

DELIVERY DIFFERENCE

Rated speed rpm	:	1400	Del. quantity		
Aneroid pressure	:	hPa	cm ³ /1000 strokes	:	1.5
	:	1200	Tolerance		
Del. quantity			cm ³ /1000 strokes	:	1.5
cm ³ /1000 strokes	:		Check tolerance		
Tolerance			cm ³ /1000S.	:	1.5
cm ³ /1000 strokes	:		Shutoff solenoid		
Check tolerance			Volt	:	12
cm ³ /1000S.	:				
Shutoff solenoid					
Volt	:				

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1400
Aneroid pressure
hPa : 1200
Tolerance mm : 0.4
Check
tolerance mm : 0.4
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 24.0
Tolerance
cm³/1000 strokes : 8.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 200
Del. quantity
cm³/1000 strokes : 80.0
Tolerance
cm³/1000 strokes : 25.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/
HBA stroke mm : 4.7
Dimension K mm : 3,3
Tolerance mm : ±0,1
Dimension KF mm : 8,4
Tolerance mm : ±0,2
MS1 dimension mm : 1,5
Tolerance mm : +0,15/-0,1
KSB travel mm : 7,0

CONTROL LEVER POSITION SET

Control lever
position YA mm : 36,9..40,9
Control lever
position YB mm : 44,5..49,7

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.10.95
Test oil : ISO 4113

Part no. : 0 460 414 122
Pump designation : VE4/11F1900R522-2

Customer-spec. information

Customer : IVECO-SOFIM
Motor : 8140.27.3700
Power KW : 76.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.75

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 027

Opening pressure
bar : 250
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1400
Aneroid pressure hPa : 1200
Setting mm : 3.4
Tolerance mm : 0.1
Shutoff solenoid Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1400
Aneroid pressure hPa : 1200
Setting hPa : 6.7
Tolerance hPa : 0.3
Shutoff solenoid Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1750
Aneroid pressure hPa : 1200
Del. quantity cm³/1000 strokes : 51.0
Tolerance cm³/1000 strokes : 0.5
Spread cm³/1000 strokes : 4.0
Check tolerance cm³/1000S. : 4.5
Shutoff solenoid Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 550
Del. quantity cm³/1000 strokes : 27.0
Tolerance cm³/1000 strokes : 0.5
Shutoff solenoid Volt : 12
Check tolerance cm³/1000S. : 4.5

IDLE SETTING

Rated speed rpm : 300
Del. quantity cm³/1000 strokes : 14.0
Tolerance cm³/1000 strokes : 2.0
Shutoff solenoid Volt : 12

Spread
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000s. : 6.5

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2050
Pressure hPa : 1200
Del. quantity
cm³/1000 strokes : 40.0
Tolerance
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 70.0
Tolerance
cm³/1000 strokes : 25.0
Shutoff solenoid
Volt : 12

LOAD-DEPENDENT START OF DELIVERY SFTTING

DELIVERY DIFFERENCE

Rated speed rpm : 1400
Pressure hPa : 1200
Del. quantity
cm³/1000 strokes : -8.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1400
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : -0.2
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1400
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : -1.0
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 1600
Aneroid pressure
hPa : 1200
SV travel mm : 5.1
Tolerance mm : 0.3
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 1200
Aneroid pressure
hPa : 1200
SV travel mm : 1.6
Tolerance mm : 0.3
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 1900
Aneroid pressure
hPa : 1200
SV travel mm : 5.7
Tolerance mm : 0.3
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 1900
Aneroid pressure
hPa : 1200
Supply pump
pressure bar : 8.8
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 700
Aneroid pressure
hPa : 1200

Supply pump pressure bar	:	3.7	Aneroid pressure hPa	:	1200
Tolerance hPa	:	0.3	Del. quantity cm ³ /1000 strokes	:	1.5
Shutoff solenoid Volt	:	12	Tolerance cm ³ /1000 strokes	:	1.5
OVERFLOW QUANTITY					
Rated speed rpm	:	1900	Check tolerance cm ³ /1000S.	:	1.5
Aneroid pressure hPa	:	1200	Shutoff solenoid Volt	:	12
Overflow quantity ccm/10s	:	152.7	Rated speed rpm	:	800
Tolerance ccm/10s	:	41.6	Aneroid pressure hPa	:	500
Check tolerance ccm/10s	:	41.6	LDA/ HBA stroke mm	:	4.7
Shutoff solenoid Volt	:	12	Del. quantity cm ³ /1000 strokes	:	42.0
Rated speed rpm	:	700	Tolerance cm ³ /1000 strokes	:	0.5
Aneroid pressure hPa	:	1200	Check tolerance cm ³ /1000S.	:	3.5
Overflow quantity ccm/10s	:	111.1	Shutoff solenoid Volt	:	12
Tolerance ccm/10s	:	22.2	Rated speed rpm	:	1900
Check tolerance ccm/10s	:	22.2	Aneroid pressure hPa	:	1200
Shutoff solenoid Volt	:	12	Del. quantity cm ³ /1000 strokes	:	50.0
DELIVERY AND BREAKAWAY CHARACTERISTIC					
Rated speed rpm	:	2050	Tolerance cm ³ /1000 strokes	:	2.5
Aneroid pressure hPa	:	1200	Check tolerance cm ³ /1000S.	:	3.5
Del. quantity cm ³ /1000 strokes	:	40.0	Shutoff solenoid Volt	:	12
Tolerance cm ³ /1000 strokes	:	2.0	Rated speed rpm	:	800
Check tolerance cm ³ /1000S.	:	4.5	Del. quantity cm ³ /1000 strokes	:	30.0
Shutoff solenoid Volt	:	12	Tolerance cm ³ /1000 strokes	:	2.5
Rated speed rpm	:	2150	Check tolerance cm ³ /1000S.	:	3.5
Aneroid pressure hPa	:	1200	Shutoff solenoid Volt	:	12
Del. quantity cm ³ /1000 strokes	:	21.0	Rated speed rpm	:	1000
Check tolerance cm ³ /1000S.	:	6.0	Aneroid pressure hPa	:	1200
Shutoff solenoid Volt	:	12	Del. quantity cm ³ /1000 strokes	:	50.5
Rated speed rpm	:	2300	Tolerance cm ³ /1000 strokes	:	2.5
			Check tolerance cm ³ /1000S.	:	4.0
			Shutoff solenoid Volt	:	12

Rated speed rpm	:	700	Del. quantity		
Aneroid pressure	:		cm3/1000 strokes	:	35.0
hPa	:	1200	Tolerance		
Del. quantity			cm3/1000 strokes	:	5.0
cm3/1000 strokes	:	54.0	Check tolerance		
Tolerance			cm3/1000S.	:	6.0
cm3/1000 strokes	:	4.5	Shutoff solenoid		
Check tolerance			Volt	:	12
cm3/1000S.	:	5.5			
Shutoff solenoid					
Volt	:	12			

Rated speed rpm	:	1750	Del. quantity		
Aneroid pressure	:		cm3/1000 strokes	:	51.0
hPa	:	1200	Tolerance		
Del. quantity			cm3/1000 strokes	:	0.5
cm3/1000 strokes	:		Check tolerance		
Tolerance			cm3/1000S.	:	3.5
cm3/1000 strokes	:		Shutoff solenoid		
Check tolerance			Volt	:	12
cm3/1000S.	:				
Shutoff solenoid					
Volt	:				

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm	:	300	Del. quantity		
Del. quantity			cm3/1000 strokes	:	1.5
cm3/1000 strokes	:		Tolerance		
Tolerance			cm3/1000 strokes	:	1.5
cm3/1000 strokes	:		Check tolerance		
Check tolerance			cm3/1000S.	:	1.5
cm3/1000S.	:		Shutoff solenoid		
Shutoff solenoid			Volt	:	12

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm	:	300	Del. quantity		
Del. quantity			cm3/1000 strokes	:	1.5
cm3/1000 strokes	:		Tolerance		
Tolerance			cm3/1000 strokes	:	1.5
cm3/1000 strokes	:		Check tolerance		
Check tolerance			cm3/1000S.	:	1.5
cm3/1000S.	:		Shutoff solenoid		
Shutoff solenoid			Volt	:	12

IDLE DELIVERY

Rated speed rpm	:	450	Del. quantity		
Del. quantity			cm3/1000 strokes	:	1.5
cm3/1000 strokes	:		Tolerance		
Tolerance			cm3/1000 strokes	:	1.5
cm3/1000 strokes	:		Check tolerance		
Check tolerance			cm3/1000S.	:	1.5
cm3/1000S.	:		Shutoff solenoid		
Shutoff solenoid			Volt	:	12
Volt	:				

Rated speed rpm	:	250	Del. quantity	
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cm3/1000 strokes	:	35.0	Tolerance		
Tolerance			cm3/1000 strokes	:	5.0
cm3/1000 strokes	:		Check tolerance		
Check tolerance			cm3/1000S.	:	6.0
cm3/1000S.	:		Shutoff solenoid		
Shutoff solenoid			Volt	:	12
Volt	:				

CHECKING LOAD-DEPENDENT START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm	:	1400	Del. quantity		
Aneroid pressure	:		cm3/1000 strokes	:	-12.0
hPa	:	1200	Tolerance		
Del. quantity			cm3/1000 strokes	:	3.0
cm3/1000 strokes	:		Check tolerance		
Check tolerance			cm3/1000S.	:	4.0
cm3/1000S.	:		Shutoff solenoid		
Shutoff solenoid			Volt	:	12
Volt	:				

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm	:	1400	Del. quantity		
Aneroid pressure	:		cm3/1000 strokes	:	-1.0
hPa	:	1200	Tolerance		
Del. quantity			cm3/1000 strokes	:	0.1
cm3/1000 strokes	:		Check tolerance		
Check tolerance			cm3/1000S.	:	0.1
cm3/1000S.	:		Shutoff solenoid		
Shutoff solenoid			Volt	:	12
Volt	:				

DELIVERY DIFFERENCE

Rated speed rpm	:	1400	Del. quantity		
Aneroid pressure	:		cm3/1000 strokes	:	1.5
hPa	:	1200	Tolerance		
Del. quantity			cm3/1000 strokes	:	1.5
cm3/1000 strokes	:		Check tolerance		
Check tolerance			cm3/1000S.	:	1.5
cm3/1000S.	:		Shutoff solenoid		
Shutoff solenoid			Volt	:	12
Volt	:				

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1400
Aneroid pressure
hPa : 1200
Tolerance mm : 0.4
Check
tolerance mm : 0.4
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : 4.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 200
Del. quantity
cm³/1000 strokes : 80.0
Tolerance
cm³/1000 strokes : 25.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/
HBA stroke mm : 4.7
Dimension K mm : 3,3
Tolerance mm : +0,1
Dimension KF mm : -
MS1 dimension mm : 1,4
Tolerance mm : +0,15/-0,1
KSB travel mm : 10,0

CONTROL LEVER POSITION SET

Control lever
position YA mm : 36,9..40,9
Control lever
position YB mm : 44,5..49,7

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.03.95
Test oil : ISO 4113

Part no. : 0 460 484 067
Pump designation : VE4/8F2300R537

Customer-spec. information

Customer : FIAT-AUTO
Motor : M708 HT 17.D
Power KW : 53.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1500
Aneroid pressure hPa : 1000
Setting mm : 4.1
Tolerance mm : 0.1
Shutoff solenoid Volt : 12
KSB/AFB Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1500
Aneroid pressure hPa : 1000
Setting hPa : 5.5
Tolerance hPa : 0.3
Shutoff solenoid Volt : 12
KSB/AFB Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1500
Aneroid pressure hPa : 1000
Del. quantity cm³/1000 strokes : 41.5
Tolerance cm³/1000 strokes : 0.5
Spread cm³/1000 strokes : 2.5
Check tolerance cm³/1000S. : 2.5
Shutoff solenoid Volt : 12
KSB/AFB Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 750
Del. quantity cm³/1000 strokes : 28.5
Tolerance cm³/1000 strokes : 0.5
Shutoff solenoid Volt : 12
Check tolerance cm³/1000S. : 2.5
KSB/AFB Volt : 12

IDLE SETTING

Rated speed rpm	:	450	Aneroid pressure hPa	:	1000
Del. quantity cm ³ /1000 strokes	:	12.0	SV travel mm	:	1.4
Tolerance cm ³ /1000 strokes	:	2.0	Tolerance mm	:	0.3
Shutoff solenoid Volt	:	12	Check tolerance mm	:	0.6
Spread cm ³ /1000 strokes	:	2.5	Shutoff solenoid Volt	:	12
Check tolerance cm ³ /1000S.	:	2.5	KSB/AFB Volt	:	12
KSB/AFB Volt	:	12	Rated speed rpm	:	400
FULL-LOAD SPEED REGULATION			Aneroid pressure hPa	:	1000
Rated speed rpm	:	2500	SV travel mm	:	1.5
Pressure hPa	:	1000	Tolerance mm	:	1.0
Del. quantity cm ³ /1000 strokes	:	30.5	Check tolerance mm	:	1.3
Tolerance cm ³ /1000 strokes	:	2.0	Shutoff solenoid Volt	:	12
Shutoff solenoid Volt	:	12	Rated speed rpm	:	1100
KSB/AFB Volt	:	12	Aneroid pressure hPa	:	1000
STARTING FUEL DELIVERY			SV travel mm	:	3.0
Rated speed rpm	:	100	Tolerance mm	:	1.0
Del. quantity cm ³ /1000 strokes	:	47.0	Check tolerance mm	:	1.7
Tolerance cm ³ /1000 strokes	:	12.0	Shutoff solenoid Volt	:	12
Shutoff solenoid Volt	:	12	Rated speed rpm	:	2300
KSB/AFB Volt	:	12	Aneroid pressure hPa	:	1000
INJECTION-PUMP TEST SPECIFICATIONS			SV travel mm	:	8.2
TIMING DEVICE CHARACTERISTIC			Tolerance mm	:	0.3
Rated speed rpm	:	2000	Check tolerance mm	:	0.6
Aneroid pressure hPa	:	1000	Shutoff solenoid Volt	:	12
Tolerance mm	:	0.3	KSB/AFB Volt	:	12
Check tolerance mm	:	0.6	SUPPLY PUMP PRESSURE CHARACTERISTIC		
Shutoff solenoid Volt	:	12	Rated speed rpm	:	2300
KSB/AFB Volt	:	12	Aneroid pressure hPa	:	1000
Rated speed rpm	:	1000	Supply pump pressure bar	:	7.6

Rated speed rpm	:	1000	Del. quantity		
Aneroid pressure			cm ³ /1000 strokes	:	10.5
hPa	:	1000	Check tolerance		
Supply pump			cm ³ /1000S.	:	5.0
pressure bar	:	4.2	Shutoff solenoid		
Tolerance hPa	:	0.3	Volt	:	12
Shutoff solenoid			KSB/AFB Volt	:	12
Volt	:	12			
KSB/AFB Volt	:	12	Rated speed rpm	:	2900
OVERFLOW QUANTITY					
Rated speed rpm	:	750	Aneroid pressure		
Overflow quantity			hPa	:	1000
ccm/10s	:	63.8	Del. quantity		
Tolerance			cm ³ /1000 strokes	:	1.5
ccm/10s	:	22.2	Check tolerance		
Check tolerance			cm ³ /1000S.	:	1.5
ccm/10s	:	22.2	Shutoff solenoid		
Shutoff solenoid			Volt	:	12
Volt	:	12	KSB/AFB Volt	:	12
KSB/AFB Volt	:	12			
Rated speed rpm	:	2300	Rated speed rpm	:	1100
Aneroid pressure			Aneroid pressure		
hPa	:	1000	hPa	:	350
Overflow quantity			LDA/		
ccm/10s	:	97.2	HBA stroke mm	:	5.1
Tolerance			Del. quantity		
ccm/10s	:	41.6	cm ³ /1000 strokes	:	35.5
Check tolerance			Tolerance		
ccm/10s	:	41.6	cm ³ /1000 strokes	:	0.5
Shutoff solenoid			Check tolerance		
Volt	:	12	cm ³ /1000S.	:	2.5
KSB/AFB Volt	:	12	Shutoff solenoid		
			Volt	:	12
DELIVERY AND BREAKAWAY CHARACTERISTIC					
Rated speed rpm	:	2500	Rated speed rpm	:	2300
Aneroid pressure			Aneroid pressure		
hPa	:	1000	hPa	:	1000
Del. quantity			Del. quantity		
cm ³ /1000 strokes	:	30.5	cm ³ /1000 strokes	:	41.5
Tolerance			Tolerance		
cm ³ /1000 strokes	:	2.0	cm ³ /1000 strokes	:	1.0
Check tolerance			Check tolerance		
cm ³ /1000S.	:	5.0	cm ³ /1000S.	:	2.3
Shutoff solenoid			Shutoff solenoid		
Volt	:	12	Volt	:	12
KSB/AFB Volt	:	12	KSB/AFB Volt	:	12
Rated speed rpm	:	2700			
Aneroid pressure			Rated speed rpm	:	1100
hPa	:	1000	Del. quantity		
			cm ³ /1000 strokes	:	30.5
			Tolerance		
			cm ³ /1000 strokes	:	1.5

Check tolerance cm ³ /1000S.	:	2.5	Shutoff solenoid Volt	:	12
Shutoff solenoid Volt	:	12	KSBAFB Volt	:	12
KSBAFB Volt	:	12	Rated speed rpm	:	400
Rated speed rpm	:	750	Del. quantity cm ³ /1000 strokes	:	23.0
Aneroid pressure hPa	:	1000	Tolerance cm ³ /1000 strokes	:	2.5
Del. quantity cm ³ /1000 strokes	:	40.5	Shutoff solenoid Volt	:	12
Tolerance cm ³ /1000 strokes	:	1.5	KSBAFB Volt	:	12
Check tolerance cm ³ /1000S.	:	2.5			
Shutoff solenoid Volt	:	12			
KSBAFB Volt	:	12			
Rated speed rpm	:	1500			
Aneroid pressure hPa	:	1000			
Del. quantity cm ³ /1000 strokes	:	41.5			
Tolerance cm ³ /1000 strokes	:	0.5			
Check tolerance cm ³ /1000S.	:	2.0			
Shutoff solenoid Volt	:	12			

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm	:	450
Del. quantity cm ³ /1000 strokes	:	1.5
Tolerance cm ³ /1000 strokes	:	1.5
Check tolerance cm ³ /1000S.	:	1.5
Spread cm ³ /1000 strokes	:	5.0
KSBAFB Volt	:	12

IDLE DELIVERY

Rated speed rpm	:	550
Del. quantity cm ³ /1000 strokes	:	1.5
Tolerance cm ³ /1000 strokes	:	1.5
Check tolerance cm ³ /1000S.	:	1.5

Shutoff solenoid Volt	:	12
KSBAFB Volt	:	12
Rated speed rpm	:	400
Del. quantity cm ³ /1000 strokes	:	23.0
Tolerance cm ³ /1000 strokes	:	2.5
Shutoff solenoid Volt	:	12
KSBAFB Volt	:	12

EXHAUST-GAS RECIRCULATION

Rated speed rpm	:	1100
Aneroid pressure hPa	:	1000
Del. quantity cm ³ /1000 strokes	:	20.0
Tolerance cm ³ /1000 strokes	:	1.0
Check tolerance cm ³ /1000S.	:	2.5
Shutoff solenoid Volt	:	12
KSBAFB Volt	:	12

START TRANSITION

Rated speed rpm	:	600
Del. quantity cm ³ /1000 strokes	:	24.0
Tolerance cm ³ /1000 strokes	:	10.0
Shutoff solenoid Volt	:	12
KSBAFB Volt	:	12

Rated speed rpm	:	300
Del. quantity cm ³ /1000 strokes	:	47.0
Tolerance cm ³ /1000 strokes	:	10.0
Shutoff solenoid Volt	:	12
KSBAFB Volt	:	12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/
HBA stroke mm : 5,1
Dimension K mm : 3,3
Tolerance mm : $\pm 0,1$
Dimension KF mm : 5,4
Tolerance mm : $\pm 0,2$
Dimension MS mm : 1,4
Tolerance mm : $\pm 0,2$

POTENTIOMETER
SET

1. measurement
voltage Volt : 5,0
1. measurement
voltage Volt : 3,32

MICROSWITCH
SET

: ARF 12,0

CONTROL LEVER POSITION
SET

Control lever
position YA mm : 37,2..39,2

Control lever
position YB mm : 43,9..52,5

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.08.95
Test oil : ISO 4113

Part no. : 0 460 484 083
Pump designation : VE4/8F2300R537-1

Customer-spec. information

Customer : FIAT-AUTO
Motor : M708 HT 17.D
Power KW : 53.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1500
Aneroid pressure hPa : 1000
Setting mm : 4.4
Tolerance mm : 0.1
Shutoff solenoid Volt : 12
KSB/AFB Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1500
Aneroid pressure hPa : 1000
Setting hPa : 5.8
Tolerance hPa : 0.3
Shutoff solenoid Volt : 12
KSB/AFB Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1500
Aneroid pressure hPa : 1000
Del. quantity cm³/1000 strokes : 41.5
Tolerance cm³/1000 strokes : 0.5
Spread cm³/1000 strokes : 2.5
Check tolerance cm³/1000s. : 2.5
Shutoff solenoid Volt : 12
KSB/AFB Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 750
Del. quantity cm³/1000 strokes : 31.5
Tolerance cm³/1000 strokes : 0.5
Shutoff solenoid Volt : 12
Check tolerance cm³/1000s. : 2.5
KSB/AFB Volt : 12

IDLE SETTING

Rated speed rpm	:	450	Aneroid pressure hPa	:	1000
Del. quantity cm ³ /1000 strokes	:	10.0	SV travel mm	:	1.5
Tolerance cm ³ /1000 strokes	:	2.0	Tolerance mm	:	0.3
Shutoff solenoid Volt	:	12	Check tolerance mm	:	0.6
Spread cm ³ /1000 strokes	:	2.5	Shutoff solenoid Volt	:	12
Check tolerance cm ³ /1000S.	:	2.5	KSB/AFB Volt	:	12
KSB/AFB Volt	:	12	Rated speed rpm	:	450
FULL-LOAD SPEED REGULATION			Aneroid pressure hPa	:	1000
Rated speed rpm	:	2500	SV travel mm	:	1.5
Pressure hPa	:	1000	Tolerance mm	:	1.0
Del. quantity cm ³ /1000 strokes	:	32.5	Check tolerance mm	:	1.3
Tolerance cm ³ /1000 strokes	:	2.0	Shutoff solenoid Volt	:	12
Shutoff solenoid Volt	:	12	Rated speed rpm	:	1100
KSB/AFB Volt	:	12	Aneroid pressure hPa	:	1000
STARTING FUEL DELIVERY			SV travel mm	:	3.0
Rated speed rpm	:	100	Tolerance mm	:	1.0
Del. quantity cm ³ /1000 strokes	:	47.0	Check tolerance mm	:	1.7
Tolerance cm ³ /1000 strokes	:	12.0	Shutoff solenoid Volt	:	12
Shutoff solenoid Volt	:	12	Rated speed rpm	:	2300
KSB/AFB Volt	:	12	Aneroid pressure hPa	:	1000
INJECTION-PUMP TEST SPECIFICATIONS			SV travel mm	:	7.8
TIMING DEVICE CHARACTERISTIC			Tolerance mm	:	0.3
Rated speed rpm	:	2000	Check tolerance mm	:	0.6
Aneroid pressure hPa	:	1000	Shutoff solenoid Volt	:	12
Tolerance mm	:	0.3	KSB/AFB Volt	:	12
Check tolerance mm	:	0.6	SUPPLY PUMP PRESSURE CHARACTERISTIC		
Shutoff solenoid Volt	:	12	Rated speed rpm	:	2300
KSB/AFB Volt	:	12	Aneroid pressure hPa	:	1000
Rated speed rpm	:	1000	Supply pump pressure bar	:	8.1

Rated speed rpm	:	1000	Del. quantity		
Aneroid pressure			cm ³ /1000 strokes	:	12.5
hPa	:	1000	Check tolerance		
Supply pump			cm ³ /1000S.	:	5.0
pressure bar	:	4.2	Shutoff solenoid		
Tolerance hPa	:	0.3	Volt	:	12
Shutoff solenoid			KSB/AFB Volt	:	12
Volt	:	12			
KSB/AFB Volt	:	12	Rated speed rpm	:	2900
OVERFLOW QUANTITY					
Rated speed rpm	:	750	Aneroid pressure		
Overflow quantity			hPa	:	1000
ccm/10s	:	63.8	Del. quantity		
Tolerance			cm ³ /1000 strokes	:	1.5
ccm/10s	:	22.2	Check tolerance		
Check tolerance			cm ³ /1000S.	:	1.5
ccm/10s	:	22.2	Shutoff solenoid		
Shutoff solenoid			Volt	:	12
Volt	:	12	KSB/AFB Volt	:	12
KSB/AFB Volt	:	12			
Rated speed rpm	:	2300	Rated speed rpm	:	1100
Aneroid pressure			Aneroid pressure		
hPa	:	1000	hPa	:	350
Overflow quantity			LDA/		
ccm/10s	:	97.2	HBA stroke mm	:	5.1
Tolerance			Del. quantity		
ccm/10s	:	41.6	cm ³ /1000 strokes	:	39.0
Check tolerance			Tolerance		
ccm/10s	:	41.6	cm ³ /1000 strokes	:	0.5
Shutoff solenoid			Check tolerance		
Volt	:	12	cm ³ /1000S.	:	2.5
KSB/AFB Volt	:	12	Shutoff solenoid		
DELIVERY AND BREAKAWAY CHARACTERISTIC					
Rated speed rpm	:	2500	Volt	:	12
Aneroid pressure			KSB/AFB Volt	:	12
hPa	:	1000			
Del. quantity			Rated speed rpm	:	2300
cm ³ /1000 strokes	:	32.5	Aneroid pressure		
Tolerance			hPa	:	1000
cm ³ /1000 strokes	:	2.0	Del. quantity		
Check tolerance			cm ³ /1000 strokes	:	40.5
cm ³ /1000S.	:	5.0	Tolerance		
Shutoff solenoid			cm ³ /1000 strokes	:	1.0
Volt	:	12	Check tolerance		
KSB/AFB Volt	:	12	cm ³ /1000S.	:	2.3
Rated speed rpm	:	2700	Shutoff solenoid		
Aneroid pressure			Volt	:	12
hPa	:	1000	KSB/AFB Volt	:	12

Check tolerance cm ³ /1000S.	:	2.5	Check tolerance cm ³ /1000S.	:	1.5
Shutoff solenoid Volt	:	12	Spread cm ³ /1000 strokes	:	5.0
KSB/AFB Volt	:	12	IDLE DELIVERY		
Rated speed rpm	:	750	Rated speed rpm	:	550
Aneroid pressure hPa	:	1000	Del. quantity cm ³ /1000 strokes	:	1.5
Del. quantity cm ³ /1000 strokes	:	41.5	Tolerance cm ³ /1000 strokes	:	1.5
Tolerance cm ³ /1000 strokes	:	1.5	Check tolerance cm ³ /1000S.	:	1.5
Check tolerance cm ³ /1000S.	:	2.5	Shutoff solenoid Volt	:	12
Shutoff solenoid Volt	:	12	KSB/AFB Volt	:	12
KSB/AFB Volt	:	12	Rated speed rpm	:	400
Rated speed rpm	:	1500	Del. quantity cm ³ /1000 strokes	:	21.0
Aneroid pressure hPa	:	1000	Tolerance cm ³ /1000 strokes	:	2.5
Del. quantity cm ³ /1000 strokes	:	41.5	Shutoff solenoid Volt	:	12
Tolerance cm ³ /1000 strokes	:	0.5	KSB/AFB Volt	:	12
Check tolerance cm ³ /1000S.	:	2.0			
Shutoff solenoid Volt	:	12			

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm	:	450
Del. quantity cm ³ /1000 strokes	:	1.5
Tolerance cm ³ /1000 strokes	:	1.5
Check tolerance cm ³ /1000S.	:	1.5
Spread cm ³ /1000 strokes	:	5.0
KSB/AFB Volt	:	12

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm	:	450
Del. quantity cm ³ /1000 strokes	:	1.5
Tolerance cm ³ /1000 strokes	:	1.5
Spread cm ³ /1000 strokes	:	5.0

EXHAUST-GAS RECIRCULATION

Rated speed rpm	:	1100
Aneroid pressure hPa	:	1000
Del. quantity cm ³ /1000 strokes	:	20.0
Tolerance cm ³ /1000 strokes	:	1.0
Check tolerance cm ³ /1000S.	:	2.5
Shutoff solenoid Volt	:	12
KSB/AFB Volt	:	12

START TRANSITION

Rated speed rpm	:	600
Del. quantity cm ³ /1000 strokes	:	24.0
Tolerance cm ³ /1000 strokes	:	10.0
Shutoff solenoid Volt	:	12

KSB/AFB Volt : 12

 Rated speed rpm : 300

 Del. quantity cm³/1000 strokes : 47.0

 Tolerance cm³/1000 strokes : 10.0

 Shutoff solenoid

 Volt : 12

 KSB/AFB Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

 LDA/

 HBA stroke mm : 5.1

 Dimension K mm : 3,3

 Tolerance mm : +0,1

 Dimension KF mm : 5,4

 Tolerance mm : +0,2

 Dimension MS mm : 1,4

 Tolerance mm : +0,2

 POTENTIOMETER

 SET

 1. measurement
 voltage Volt : 1=3,32 V

 MICROSWITCH

 SET

 : 1=ARF 12,0

 CONTROL LEVER POSITION

 SET

 Control lever
 position YA mm : 37,2..39,2

 Control lever
 position YB mm : 43,9..52,5

 End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.02.95
Test oil : ISO 4113

Part no. : 0 460 484 068
Pump designation : VE4/8F2300R538

Customer-spec. information

Customer : FIAT-AUTO
Motor : M708 HT 17.L
Power KW : 53.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1500
Aneroid pressure hPa : 1000
Setting mm : 4.1
Tolerance mm : 0.1
Shutoff solenoid Volt : 12
KSB/AFB Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1500
Aneroid pressure hPa : 1000
Setting hPa : 5.5
Tolerance hPa : 0.3
Shutoff solenoid Volt : 12
KSB/AFB Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1500
Aneroid pressure hPa : 1000
Del. quantity cm³/1000 strokes : 41.5
Tolerance cm³/1000 strokes : 0.5
Spread cm³/1000 strokes : 2.5
Check tolerance cm³/1000S. : 2.5
Shutoff solenoid Volt : 12
KSB/AFB Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 750
Del. quantity cm³/1000 strokes : 28.5
Tolerance cm³/1000 strokes : 0.5
Shutoff solenoid Volt : 12
Check tolerance cm³/1000S. : 2.5
KSB/AFB Volt : 12

IDLE SETTING

Rated speed rpm	:	450	Aneroid pressure hPa	:	1000
Del. quantity cm ³ /1000 strokes	:	12.0	SV travel mm	:	1.4
Tolerance cm ³ /1000 strokes	:	2.0	Tolerance mm	:	0.3
Shutoff solenoid Volt	:	12	Check tolerance mm	:	0.6
Spread cm ³ /1000 strokes	:	2.5	Shutoff solenoid Volt	:	12
Check tolerance cm ³ /1000S.	:	2.5	KSB/AFB Volt	:	12
KSB/AFB Volt	:	12	Rated speed rpm	:	400
FULL-LOAD SPEED REGULATION			Aneroid pressure hPa	:	1000
Rated speed rpm	:	2500	SV travel mm	:	1.5
Pressure hPa	:	1000	Tolerance mm	:	1.0
Del. quantity cm ³ /1000 strokes	:	30.5	Check tolerance mm	:	1.3
Tolerance cm ³ /1000 strokes	:	2.0	Shutoff solenoid Volt	:	12
Shutoff solenoid Volt	:	12	Rated speed rpm	:	1100
KSB/AFB Volt	:	12	Aneroid pressure hPa	:	1000
STARTING FUEL DELIVERY			SV travel mm	:	3.0
Rated speed rpm	:	100	Tolerance mm	:	1.0
Del. quantity cm ³ /1000 strokes	:	47.0	Check tolerance mm	:	1.7
Tolerance cm ³ /1000 strokes	:	12.0	Shutoff solenoid Volt	:	12
Shutoff solenoid Volt	:	12	Rated speed rpm	:	2300
KSB/AFB Volt	:	12	Aneroid pressure hPa	:	1000
INJECTION-PUMP TEST SPECIFICATIONS			SV travel mm	:	8.2
TIMING DEVICE CHARACTERISTIC			Tolerance mm	:	0.3
Rated speed rpm	:	2000	Check tolerance mm	:	0.6
Aneroid pressure hPa	:	1000	Shutoff solenoid Volt	:	12
Tolerance mm	:	0.3	KSB/AFB Volt	:	12
Check tolerance mm	:	0.6	SUPPLY PUMP PRESSURE CHARACTERISTIC		
Shutoff solenoid Volt	:	12	Rated speed rpm	:	2300
KSB/AFB Volt	:	12	Aneroid pressure hPa	:	1000
Rated speed rpm	:	1000	Supply pump pressure bar	:	7.6

Rated speed rpm	:	1000	Del. quantity	
Aneroid pressure			cm ³ /1000 strokes	: 10.5
hPa	:	1000	Check tolerance	
Supply pump			cm ³ /1000S.	: 5.0
pressure bar	:	4.2	Shutoff solenoid	
Tolerance hPa	:	0.3	Volt	: 12
Shutoff solenoid			KSB/AFB Volt	: 12
Volt	:	12		
KSB/AFB Volt	:	12	Rated speed rpm	: 2900
OVERFLOW QUANTITY				
Rated speed rpm	:	750	Aneroid pressure	
Overflow quantity			hPa	: 1000
ccm/10s	:	63.8	Del. quantity	
Tolerance			cm ³ /1000 strokes	: 1.5
ccm/10s	:	22.2	Check tolerance	
Check tolerance			cm ³ /1000S.	: 1.5
ccm/10s	:	22.2	Shutoff solenoid	
Shutoff solenoid			Volt	: 12
Volt	:	12	KSB/AFB Volt	: 12
KSB/AFB Volt	:	12		
Rated speed rpm	:	2300	Rated speed rpm	: 1100
Aneroid pressure			Aneroid pressure	
hPa	:	1000	hPa	: 350
Overflow quantity			LDA/	
ccm/10s	:	97.2	HBA stroke mm	: 5.1
Tolerance			Del. quantity	
ccm/10s	:	41.6	cm ³ /1000 strokes	: 35.5
Check tolerance			Tolerance	
ccm/10s	:	41.6	cm ³ /1000 strokes	: 0.5
Shutoff solenoid			Check tolerance	
Volt	:	12	cm ³ /1000S.	: 2.5
KSB/AFB Volt	:	12	Shutoff solenoid	
			Volt	: 12
DELIVERY AND BREAKAWAY CHARACTERISTIC				
Rated speed rpm	:	2500	KSB/AFB Volt	: 12
Aneroid pressure				
hPa	:	1000	Rated speed rpm	: 2300
Del. quantity			Aneroid pressure	
cm ³ /1000 strokes	:	30.5	hPa	: 1000
Tolerance			Del. quantity	
cm ³ /1000 strokes	:	2.0	cm ³ /1000 strokes	: 41.5
Check tolerance			Tolerance	
cm ³ /1000S.	:	5.0	cm ³ /1000 strokes	: 1.0
Shutoff solenoid			Check tolerance	
Volt	:	12	cm ³ /1000S.	: 2.3
KSB/AFB Volt	:	12	Shutoff solenoid	
			Volt	: 12
Rated speed rpm	:	2700	KSB/AFB Volt	: 12
Aneroid pressure				
hPa	:	1000	Rated speed rpm	: 1100
			Del. quantity	
			cm ³ /1000 strokes	: 30.5
			Tolerance	
			cm ³ /1000 strokes	: 1.5

Check tolerance cm ³ /1000S.	:	2.5	Shutoff solenoid Volt	:	12
Shutoff solenoid Volt	:	12	KSB/AFB Volt	:	12
KSB/AFB Volt	:	12	Rated speed rpm	:	400
Rated speed rpm	:	750	Del. quantity cm ³ /1000 strokes	:	23.0
Aneroid pressure hPa	:	1000	Tolerance cm ³ /1000 strokes	:	2.5
Del. quantity cm ³ /1000 strokes	:	40.5	Shutoff solenoid Volt	:	12
Tolerance cm ³ /1000 strokes	:	1.5	KSB/AFB Volt	:	12
Check tolerance cm ³ /1000S.	:	2.5	START TRANSITION		
Shutoff solenoid Volt	:	12	Rated speed rpm	:	600
KSB/AFB Volt	:	12	Del. quantity cm ³ /1000 strokes	:	24.0
Rated speed rpm	:	1500	Tolerance cm ³ /1000 strokes	:	10.0
Aneroid pressure hPa	:	1000	Shutoff solenoid Volt	:	12
Del. quantity cm ³ /1000 strokes	:	41.5	KSB/AFB Volt	:	12
Tolerance cm ³ /1000 strokes	:	0.5	Rated speed rpm	:	300
Check tolerance cm ³ /1000S.	:	2.0	Del. quantity cm ³ /1000 strokes	:	47.0
Shutoff solenoid Volt	:	12	Tolerance cm ³ /1000 strokes	:	10.0
<hr/>					
ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP					
Rated speed rpm	:	450	Shutoff solenoid Volt	:	12
Del. quantity cm ³ /1000 strokes	:	1.5	KSB/AFB Volt	:	12
Tolerance cm ³ /1000 strokes	:	1.5	<hr/>		
Check tolerance cm ³ /1000S.	:	1.5	ASSEMBLY AND ADJUSTMENT DIMENSIONS		
Spread cm ³ /1000 strokes	:	5.0	LDA/ HBA stroke mm	:	5.1
KSB/AFB Volt	:	12	Dimension K mm	:	3,3
<hr/>					
IDLE DELIVERY					
Rated speed rpm	:	550	Tolerance mm	:	±0,1
Del. quantity cm ³ /1000 strokes	:	1.5	Dimension KF mm	:	5,4
Tolerance cm ³ /1000 strokes	:	1.5	Tolerance mm	:	±0,2
Check tolerance cm ³ /1000S.	:	1.5	Dimension MS mm	:	1,4
			Tolerance mm	:	±0,2
			CONTROL LEVER POSITION SET		

Control lever
position YA mm : 37,2..39,2

Control lever
position YB mm : 43,9..52,5

End of +est-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.08.95
Test oil : ISO 4113

Part no. : 0 460 484 084
Pump designation : VE4/8F2300R538-1

Customer-spec. information

Customer : FIAT-AUTO
Motor : M708 NT 17.L
Power KW : 53.0

TEST BENCH REQUIREMENTS

Calibrating-oil return

temperature °C : 45
Tolerance °C : 1

Overflow restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder assembly : 1 688 901 022

Opening pressure bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1500
Aneroid pressure hPa : 1000
Setting mm : 4.4
Tolerance mm : 0.1
Shutoff solenoid Volt : 12
KSB/AFB Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1500
Aneroid pressure hPa : 1000
Setting hPa : 5.8
Tolerance hPa : 0.3
Shutoff solenoid Volt : 12
KSB/AFB Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1500
Aneroid pressure hPa : 1000
Del. quantity cm³/1000 strokes : 41.5
Tolerance cm³/1000 strokes : 0.5
Spread cm³/1000 strokes : 2.5
Check tolerance cm³/1000S. : 2.5
Shutoff solenoid Volt : 12
KSB/AFB Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 750
Del. quantity cm³/1000 strokes : 31.5
Tolerance cm³/1000 strokes : 0.5
Shutoff solenoid Volt : 12
Check tolerance cm³/1000S. : 2.5
KSB/AFB Volt : 12

IDLE SETTING

Rated speed rpm	:	450	Aneroid pressure		
Del. quantity			hPa	:	1000
cm ³ /1000 strokes	:	10.0	SV travel mm	:	1.5
Tolerance			Tolerance mm	:	0.3
cm ³ /1000 strokes	:	2.0	Check		
Shutoff solenoid			tolerance mm	:	0.6
Volt	:	12	Shutoff solenoid		
Spread			Volt	:	12
cm ³ /1000 strokes	:	2.5	KSB/AFB Volt	:	12
Check tolerance			Rated speed rpm	:	450
cm ³ /1000S.	:	2.5	Aneroid pressure		
KSB/AFB Volt	:	12	hPa	:	1000
FULL-LOAD SPEED REGULATION					
Rated speed rpm	:	2500	SV travel mm	:	1.5
Pressure hPa	:	1000	Tolerance mm	:	1.0
Del. quantity			Check		
cm ³ /1000 strokes	:	32.5	tolerance mm	:	1.3
Tolerance			Shutoff solenoid		
cm ³ /1000 strokes	:	2.0	Volt	:	12
Shutoff solenoid			Rated speed rpm	:	1100
Volt	:	12	Aneroid pressure		
KSB/AFB Volt	:	12	hPa	:	1000
STARTING FUEL DELIVERY					
Rated speed rpm	:	100	SV travel mm	:	3.0
Del. quantity			Tolerance mm	:	1.0
cm ³ /1000 strokes	:	47.0	Check		
Tolerance			tolerance mm	:	1.7
cm ³ /1000 strokes	:	12.0	Shutoff solenoid		
Shutoff solenoid			Volt	:	12
Volt	:	12	Rated speed rpm	:	2300
KSB/AFB Volt	:	12	Aneroid pressure		
			hPa	:	1000
<hr/> INJECTION-PUMP TEST SPECIFICATIONS					
TIMING DEVICE CHARACTERISTIC					
Rated speed rpm	:	2000	SV travel mm	:	7.8
Aneroid pressure			Tolerance mm	:	0.3
hPa	:	1000	Check		
Tolerance mm	:	0.3	tolerance mm	:	0.6
Check			Shutoff solenoid		
tolerance mm	:	0.6	Volt	:	12
Shutoff solenoid			KSB/AFB Volt	:	12
Volt	:	12	SUPPLY PUMP PRESSURE CHARACTERISTIC		
KSB/AFB Volt	:	12	Rated speed rpm	:	2300
Rated speed rpm	:	1000	Aneroid pressure		
			hPa	:	1000
SUPPLY PUMP PRESSURE CHARACTERISTIC					
Supply pump			Supply pump		
pressure bar			pressure bar	:	8.1
Tolerance hPa			Tolerance hPa	:	0.3
Shutoff solenoid			Shutoff solenoid		
Volt	:	12	Volt	:	12
KSB/AFB Volt	:	12	KSB/AFB Volt	:	12

Rated speed rpm	:	1000	Del. quantity	
Aneroid pressure			cm3/1000 strokes	: 12.5
hPa	:	1000	Check tolerance	
Supply pump			cm3/1000S.	: 5.0
pressure bar	:	4.2	Shutoff solenoid	
Tolerance hPa	:	0.3	Volt	: 12
Shutoff solenoid			KSB/AFB Volt	: 12
Volt	:	12		
KSB/AFB Volt	:	12	Rated speed rpm	: 2900
OVERFLOW QUANTITY				
Rated speed rpm	:	750	Aneroid pressure	
Overflow quantity			hPa	: 1000
ccm/10s	:	63.8	Del. quantity	
Tolerance			cm3/1000 strokes	: 1.5
ccm/10s	:	22.2	Check tolerance	
Check tolerance			cm3/1000S.	: 1.5
ccm/10s	:	22.2	Shutoff solenoid	
Shutoff solenoid			Volt	: 12
Volt	:	12	KSB/AFB Volt	: 12
KSB/AFB Volt	:	12	Rated speed rpm	: 1100
Rated speed rpm	:	2300	Aneroid pressure	
Aneroid pressure			hPa	: 350
hPa	:	1000	LDA/	
Overflow quantity			HBA stroke mm	: 5.1
ccm/10s	:	97.2	Del. quantity	
Tolerance			cm3/1000 strokes	: 39.0
ccm/10s	:	41.6	Check tolerance	
Check tolerance			cm3/1000S.	: 0.5
ccm/10s	:	41.6	Shutoff solenoid	
Shutoff solenoid			Volt	: 2.5
Volt	:	12	KSB/AFB Volt	: 12
KSB/AFB Volt	:	12	Rated speed rpm	: 2300
DELIVERY AND BREAKAWAY CHARACTERISTIC				
Rated speed rpm	:	2500	Aneroid pressure	
Aneroid pressure			hPa	: 1000
hPa	:	1000	Del. quantity	
Del. quantity			cm3/1000 strokes	: 40.5
cm3/1000 strokes	:	32.5	Tolerance	
Tolerance			cm3/1000 strokes	: 1.0
cm3/1000 strokes	:	2.0	Check tolerance	
Check tolerance			cm3/1000S.	: 2.3
cm3/1000S.	:	5.0	Shutoff solenoid	
Shutoff solenoid			Volt	: 12
Volt	:	12	KSB/AFB Volt	: 12
KSB/AFB Volt	:	12	Rated speed rpm	: 1100
Rated speed rpm	:	2700	Del. quantity	
Aneroid pressure			cm3/1000 strokes	: 31.5
hPa	:	1000	Tolerance	
			cm3/1000 strokes	: 1.5

Check tolerance cm³/1000s. : 2.5
 Shutoff solenoid Volt : 12
 KSB/AFB Volt : 12
 Rated speed rpm : 750
 Aneroid pressure hPa : 1000
 Del. quantity cm³/1000 strokes : 41.5
 Tolerance cm³/1000 strokes : 1.5
 Check tolerance cm³/1000s. : 2.5
 Shutoff solenoid Volt : 12
 KSB/AFB Volt : 12
 Rated speed rpm : 1500
 Aneroid pressure hPa : 1000
 Del. quantity cm³/1000 strokes : 41.5
 Tolerance cm³/1000 strokes : 0.5
 Check tolerance cm³/1000s. : 2.0
 Shutoff solenoid Volt : 12

**ELECTR. SHUTOFF
CONTROL LEVER, IDLE STOP**

Rated speed rpm : 450
 Del. quantity cm³/1000 strokes : 1.5
 Tolerance cm³/1000 strokes : 1.5
 Check tolerance cm³/1000s. : 1.5
 Spread cm³/1000 strokes : 5.0
 KSB/AFB Volt : 12

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 450
 Del. quantity cm³/1000 strokes : 1.5
 Tolerance cm³/1000 strokes : 1.5
 Spread cm³/1000 strokes : 5.0

Check tolerance cm³/1000s. : 1.5
 Spread cm³/1000 strokes : 5.0

IDLE DELIVERY

Rated speed rpm : 550
 Del. quantity cm³/1000 strokes : 1.5
 Tolerance cm³/1000 strokes : 1.5
 Check tolerance cm³/1000s. : 1.5
 Shutoff solenoid Volt : 12
 KSB/AFB Volt : 12
 Rated speed rpm : 400
 Del. quantity cm³/1000 strokes : 21.0
 Tolerance cm³/1000 strokes : 2.5
 Shutoff solenoid Volt : 12
 KSB/AFB Volt : 12

START TRANSITION

Rated speed rpm : 600
 Del. quantity cm³/1000 strokes : 24.0
 Tolerance cm³/1000 strokes : 10.0
 Shutoff solenoid Volt : 12
 KSB/AFB Volt : 12

Rated speed rpm : 300
 Del. quantity cm³/1000 strokes : 47.0
 Tolerance cm³/1000 strokes : 10.0
 Shutoff solenoid Volt : 12
 KSB/AFB Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/
HBA stroke mm : 5,1
Dimension K mm : 3,3
Tolerance mm : $\pm 0,1$
Dimension KF mm : 5,4
Tolerance mm : $\pm 0,2$
Dimension MS mm : 1,4
Tolerance mm : $\pm 0,2$

CONTROL LEVER POSITION
SET

Control lever
position YA mm : 37,2..39,2

Control lever
position YB mm : 43,9..52,5

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.06.94
Test oil : ISO 4113

Part no. : 0 460 424 099
Pump designation : VE4/12F1400R539

Customer-spec. information
Customer : NISSAN-MISA
Motor : B 4.40 II

TEST BENCH REQUIREMENTS

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 109

Opening pressure
bar : 207
Tolerance bar : 3

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 840

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 0,3
Outlet : A

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1100
Setting mm : 1.4
Tolerance mm : 0.1
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1100
Setting hPa : 7.2
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 840
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 74.0
Del. quantity
cm³/1000 strokes : 70.0
Tolerance
cm³/1000 strokes : 0.5
Tolerance
cm³/1000 strokes : 0.5
Spread
cm³/1000 strokes : 5.0
Spread
cm³/1000 strokes : 5.0
Shutoff solenoid
Volt : 12
Shutoff solenoid
Volt : 12
Check tolerance
cm³/1000S. : 5.0

IDLE SETTING

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 15.0
Tolerance
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12
Spread
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 5.0

FULL-LOAD SPEED REGULATION

Rated speed rpm : 1575

Del. quantity
 cm³/1000 strokes : 54.0
 Tolerance
 cm³/1000 strokes : 2.0
 Shutoff solenoid
 Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
 Del. quantity
 cm³/1000 strokes : 125.0
 Tolerance
 cm³/1000 strokes : 30.0
 Shutoff solenoid
 Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 1300
 SV travel mm : 2.9
 Tolerance mm : 0.3
 Check
 tolerance mm : 0.8
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1000

SV travel mm : 0.7
 Tolerance mm : 0.3
 Check
 tolerance mm : 0.8
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1400

SV travel mm : 3.4
 Tolerance mm : 0.3
 Check
 tolerance mm : 0.8
 Shutoff solenoid
 Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 1400
 Supply pump
 pressure bar : 8.4
 Tolerance hPa : 0.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1000
 Rated speed rpm : 500
 Supply pump
 pressure bar : 4.8
 Tolerance hPa : 0.3
 Shutoff solenoid
 Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 500
 Overflow quantity
 ccm/10s : 63.8
 Tolerance
 ccm/10s : 22.2

Check tolerance
 ccm/10s : 22.2
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1400
 Overflow quantity
 ccm/10s : 97.2
 Tolerance
 ccm/10s : 41.6

Check tolerance
 ccm/10s : 41.6
 Shutoff solenoid
 Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 1575
 Del. quantity
 cm³/1000 strokes : 54.0
 Tolerance
 cm³/1000 strokes : 2.0
 Check tolerance
 cm³/1000s : 6.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1525
 Del. quantity
 cm³/1000 strokes : 70.0
 Tolerance
 cm³/1000 strokes : 10.0
 Check tolerance
 cm³/1000s : 10.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1700
 Del. quantity
 cm³/1000 strokes : 1.5

Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 1400
Del. quantity
cm³/1000 strokes : 76.0
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 4.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 75.5
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 4.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 70.0
Tolerance
cm³/1000 strokes : 0.5
Check tolerance
cm³/1000S. : 3.5
Shutoff solenoid
Volt : 12

MECHANICAL SHUTOFF

Rated speed rpm : 1400
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5
Shutoff solenoid
Volt : 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5

Check tolerance
cm³/1000S. : 1.5

IDLE DELIVERY

Rated speed rpm : 430
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 250
Del. quantity
cm³/1000 strokes : 70.0
Tolerance
cm³/1000 strokes : 20.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 130
Del. quantity
cm³/1000 strokes : 125.0
Tolerance
cm³/1000 strokes : 30.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,7
Tolerance mm : ±0,1
Dimension KF mm : 6,4
Tolerance mm : ±0,2
Dimension MS mm : 1,1
Tolerance mm : ±0,2

CONTROL LEVER POSITION SET

Control lever
position YA mm : 37,2..39,2

Control lever
position YB mm : 52,7..60,4

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.06.95
Test oil : ISO 4113

Part no. : 0 460 414 120
Pump designation : VE4/11F1900R542-1

Customer-spec. information
Customer : IVECO-SOFIM
Motor : 8140.47.2200

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.75

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 027

Opening pressure
bar : 250
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1200
Aneroid pressure hPa : 1000
Setting mm : 1.8
Tolerance mm : 0.1
Shutoff solenoid Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1200
Aneroid pressure hPa : 1000
Setting hPa : 6.0
Tolerance hPa : 0.3
Shutoff solenoid Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1400
Aneroid pressure hPa : 1000
Del. quantity cm³/1000 strokes : 56.0
Tolerance cm³/1000 strokes : 0.5
Spread cm³/1000 strokes : 4.0
Check tolerance cm³/1000s. : 4.5
Shutoff solenoid Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 550
Del. quantity cm³/1000 strokes : 27.0
Tolerance cm³/1000 strokes : 0.5
Shutoff solenoid Volt : 12
Check tolerance cm³/1000s. : 4.5

IDLE SETTING

Rated speed rpm : 325
Del. quantity cm³/1000 strokes : 17.0
Tolerance cm³/1000 strokes : 2.0
Shutoff solenoid Volt : 12
Spread cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 6.5

Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2100
Pressure hPa : 1000
Del. quantity
cm³/1000 strokes : 37.0
Tolerance
cm³/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 1600
Aneroid pressure
hPa : 1000

SV travel mm : 4.3
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 1100
Aneroid pressure
hPa : 1000

SV travel mm : 1.1
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

LOAD-DEPENDENT START OF DELIVERY SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1400
Pressure hPa : 1000
Del. quantity
cm³/1000 strokes : -26.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 1900
Aneroid pressure
hPa : 1000
SV travel mm : 4.9
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1400
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : -0.2
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 1900
Aneroid pressure
hPa : 1000
Supply pump
pressure bar : 8.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1400
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : -0.8

Rated speed rpm : 700
Aneroid pressure
hPa : 1000
Supply pump
pressure bar : 4.1
Tolerance hPa : 0.3

Shutoff solenoid		Tolerance	
Volt	: 12	cm3/1000 strokes	: 1.5
OVERFLOW QUANTITY		Check tolerance	
Rated speed rpm	: 1900	cm3/1000S.	: 1.5
Aneroid pressure		Shutoff solenoid	
hPa	: 1000	Volt	: 12
Overflow quantity		Rated speed rpm	: 700
ccm/10s	: 138.8	Aneroid pressure	
Tolerance		hPa	: 400
ccm/10s	: 41.6	LDA/	
Check tolerance		HBA stroke mm	: 6.2
ccm/10s	: 41.6	Del. quantity	
Shutoff solenoid		cm3/1000 strokes	: 44.0
Volt	: 12	Tolerance	
Rated speed rpm	: 700	cm3/1000 strokes	: 0.5
Aneroid pressure		Check tolerance	
hPa	: 1000	cm3/1000S.	: 4.0
Overflow quantity		Shutoff solenoid	
ccm/10s	: 111.1	Volt	: 12
Tolerance		Rated speed rpm	: 1900
ccm/10s	: 22.2	Aneroid pressure	
Check tolerance		hPa	: 1000
ccm/10s	: 22.2	Del. quantity	
Shutoff solenoid		cm3/1000 strokes	: 58.5
Volt	: 12	Tolerance	
DELIVERY AND BREAKAWAY CHARACTERISTIC		cm3/1000 strokes	: 2.5
Rated speed rpm	: 2100	Check tolerance	
Aneroid pressure		cm3/1000S.	: 3.5
hPa	: 1000	Shutoff solenoid	
Del. quantity		Volt	: 12
cm3/1000 strokes	: 37.0	Rated speed rpm	: 1200
Tolerance		Aneroid pressure	
cm3/1000 strokes	: 3.0	hPa	: 1000
Check tolerance		Del. quantity	
cm3/1000S.	: 4.5	cm3/1000 strokes	: 56.0
Shutoff solenoid		Tolerance	
Volt	: 12	cm3/1000 strokes	: 2.5
Rated speed rpm	: 2200	Check tolerance	
Aneroid pressure		cm3/1000S.	: 4.0
hPa	: 1000	Shutoff solenoid	
Del. quantity		Volt	: 12
cm3/1000 strokes	: 16.0	Rated speed rpm	: 1750
Check tolerance		Aneroid pressure	
cm3/1000S.	: 6.0	hPa	: 1000
Shutoff solenoid		Del. quantity	
Volt	: 12	cm3/1000 strokes	: 58.0
Rated speed rpm	: 2280	Tolerance	
Aneroid pressure		cm3/1000 strokes	: 2.5
hPa	: 1000	Check tolerance	
Del. quantity		cm3/1000S.	: 3.5
cm3/1000 strokes	: 1.5	Shutoff solenoid	
		Volt	: 12
		Rated speer rpm	: 700

Aneroid pressure : 1000
 hPa
 Del. quantity : 57.0
 cm³/1000 strokes
 Tolerance : 4.5
 cm³/1000 strokes
 Check tolerance : 5.5
 cm³/1000S.
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1400
 Aneroid pressure : 1000
 hPa
 Del. quantity : 56.0
 cm³/1000 strokes
 Tolerance : 0.5
 cm³/1000 strokes
 Check tolerance : 3.5
 cm³/1000S.
 Shutoff solenoid
 Volt : 12

ELECTR. SHUTOFF
CONTROL LEVER, IDLE STOP

Rated speed rpm : 325
 Del. quantity : 1.5
 cm³/1000 strokes
 Tolerance : 1.5
 cm³/1000 strokes
 Check tolerance : 1.5
 cm³/1000S.

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 325
 Del. quantity : 1.5
 cm³/1000 strokes
 Tolerance : 1.5
 cm³/1000 strokes
 Check tolerance : 1.5
 cm³/1000S.

IDLE DELIVERY

Rated speed rpm : 450
 Del. quantity : 1.5
 cm³/1000 strokes
 Tolerance : 1.5
 cm³/1000 strokes
 Check tolerance : 1.5
 cm³/1000S.
 Shutoff solenoid
 Volt : 12

CHECKING LOAD-DEPENDENT
START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1400
 Aneroid pressure : 1000
 hPa
 Del. quantity : -28.0
 cm³/1000 strokes
 Tolerance : 3.0
 cm³/1000 strokes
 Check tolerance : 4.0
 cm³/1000S.
 Shutoff solenoid
 Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1400
 Aneroid pressure : 1000
 hPa
 Del. quantity : -0.8
 cm³/1000 strokes
 Tolerance : 0.1
 cm³/1000 strokes
 Check tolerance : 0.1
 cm³/1000S.
 Shutoff solenoid
 Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1400
 Aneroid pressure : 1000
 hPa
 Del. quantity : 1.5
 cm³/1000 strokes
 Tolerance : 1.5
 cm³/1000 strokes
 Check tolerance : 1.5
 cm³/1000S.
 Shutoff solenoid
 Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1400
 Aneroid pressure : 1000
 hPa
 Tolerance mm : 0.2
 Check
 tolerance mm : 0.4
 Shutoff solenoid
 Volt : 12

START TRANSITION

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 22.0
Tolerance
cm³/1000 strokes : 8.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 200
Del. quantity
cm³/1000 strokes : 80.0
Tolerance
cm³/1000 strokes : 25.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/
HBA stroke mm : 6.2
Dimension K mm : 3,3
Tolerance mm : +0,1
Dimension KF mm : 8,4
Tolerance mm : +0,2
MS1 dimension mm : 1,7
Tolerance mm : +0,15/-0,1
KSB travel mm : 5,7

CONTROL LEVER POSITION SET

Control lever
position YA mm : 33,0..35,0
Control lever
position YB mm : 48,9..54,9

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.07.95
Test oil : ISO 4113

Part no. : 0 460 414 128
Pump designation : VE4/11F1900R542-2

Customer-spec. information

Customer : IVECO-SOFIM
Motor : 8140.47.2200
Power KW : 83.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.75

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 027

Opening pressure
bar : 250
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1200
Aneroid pressure hPa : 1000
Setting mm : 1.8
Tolerance mm : 0.1
Shutoff solenoid Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1200
Aneroid pressure hPa : 1000
Setting hPa : 6.0
Tolerance hPa : 0.3
Shutoff solenoid Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1400
Aneroid pressure hPa : 1000
Del. quantity cm³/1000 strokes : 56.0
Tolerance cm³/1000 strokes : 0.5
Spread cm³/1000 strokes : 4.0
Check tolerance cm³/1000S. : 4.5
Shutoff solenoid Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 550
Del. quantity cm³/1000 strokes : 27.0
Tolerance cm³/1000 strokes : 0.5
Shutoff solenoid Volt : 12
Check tolerance cm³/1000S. : 4.5

IDLE SETTING

Rated speed rpm : 325
Del. quantity cm³/1000 strokes : 17.0
Tolerance cm³/1000 strokes : 2.0
Shutoff solenoid Volt : 12

Spread
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 6.5

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2100
Pressure hPa : 1000
Del. quantity
cm³/1000 strokes : 37.0
Tolerance
cm³/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 65.0
Tolerance
cm³/1000 strokes : 25.0
Shutoff solenoid
Volt : 12

LOAD-DEPENDENT START OF DELIVERY SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1400
Pressure hPa : 1000
Del. quantity
cm³/1000 strokes : -26.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1400
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : -0.2
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1400
Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : -0.8
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 1600
Aneroid pressure
hPa : 1000
SV travel mm : 4.3
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 1100
Aneroid pressure
hPa : 1000

SV travel mm : 1.1
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 1900
Aneroid pressure
hPa : 1000
SV travel mm : 4.9
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 1900
Aneroid pressure
hPa : 1000
Supply pump
pressure bar : 8.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 700
Aneroid pressure
hPa : 1000

Supply pump pressure bar	:	4.1	Aneroid pressure hPa	:	1000
Tolerance hPa	:	0.3	Del. quantity cm ³ /1000 strokes	:	1.5
Shutoff solenoid Volt	:	12	Tolerance cm ³ /1000 strokes	:	1.5
OVERFLOW QUANTITY					
Rated speed rpm	:	1900	Check tolerance cm ³ /1000S.	:	1.5
Aneroid pressure hPa	:	1000	Shutoff solenoid Volt	:	12
Overflow quantity ccm/10s	:	138.8	Rated speed rpm	:	700
Tolerance ccm/10s	:	41.6	Aneroid pressure hPa	:	400
Check tolerance ccm/10s	:	41.6	LDA/ HBA stroke mm	:	6.2
Shutoff solenoid Volt	:	12	Del. quantity cm ³ /1000 strokes	:	44.0
Rated speed rpm	:	700	Tolerance cm ³ /1000 strokes	:	0.5
Aneroid pressure hPa	:	1000	Check tolerance cm ³ /1000S.	:	4.0
Overflow quantity ccm/10s	:	111.1	Shutoff solenoid Volt	:	12
Tolerance ccm/10s	:	22.2	Rated speed rpm	:	1900
Check tolerance ccm/10s	:	22.2	Aneroid pressure hPa	:	1000
Shutoff solenoid Volt	:	12	Del. quantity cm ³ /1000 strokes	:	57.0
DELIVERY AND BREAKAWAY CHARACTERISTIC					
Rated speed rpm	:	2100	Tolerance cm ³ /1000 strokes	:	2.5
Aneroid pressure hPa	:	1000	Check tolerance cm ³ /1000S.	:	3.5
Del. quantity cm ³ /1000 strokes	:	37.0	Shutoff solenoid Volt	:	12
Tolerance cm ³ /1000 strokes	:	3.0	Rated speed rpm	:	1200
Check tolerance cm ³ /1000S.	:	4.5	Aneroid pressure hPa	:	1000
Shutoff solenoid Volt	:	12	Del. quantity cm ³ /1000 strokes	:	55.0
Rated speed rpm	:	2200	Tolerance cm ³ /1000 strokes	:	2.5
Aneroid pressure hPa	:	1000	Check tolerance cm ³ /1000S.	:	4.0
Del. quantity cm ³ /1000 strokes	:	18.0	Shutoff solenoid Volt	:	12
Check tolerance cm ³ /1000S.	:	6.0	Rated speed rpm	:	1750
Shutoff solenoid Volt	:	12	Aneroid pressure hPa	:	1000
Rated speed rpm	:	2280	Del. quantity cm ³ /1000 strokes	:	58.0
			Tolerance cm ³ /1000 strokes	:	2.5
			Check tolerance cm ³ /1000S.	:	3.5

Shutoff solenoid Volt : 12
 Rated speed rpm : 700
 Aneroid pressure hPa : 1000
 Del. quantity cm³/1000 strokes : 57.0
 Tolerance cm³/1000 strokes : 4.5
 Check tolerance cm³/1000S. : 5.5
 Shutoff solenoid Volt : 12
 Rated speed rpm : 1400
 Aneroid pressure hPa : 1000
 Del. quantity cm³/1000 strokes : 56.0
 Tolerance cm³/1000 strokes : 0.5
 Check tolerance cm³/1000S. : 3.5
 Shutoff solenoid Volt : 12

**ELECTR. SHUTOFF
CONTROL LEVER, IDLE STOP**

Rated speed rpm : 325
 Del. quantity cm³/1000 strokes : 1.5
 Tolerance cm³/1000 strokes : 1.5
 Check tolerance cm³/1000S. : 1.5

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 325
 Del. quantity cm³/1000 strokes : 1.5
 Tolerance cm³/1000 strokes : 1.5
 Check tolerance cm³/1000S. : 1.5

IDLE DELIVERY

Rated speed rpm : 450
 Del. quantity cm³/1000 strokes : 1.5
 Tolerance cm³/1000 strokes : 1.5
 Check tolerance cm³/1000S. : 1.5

Shutoff solenoid Volt : 12

**CHECKING LOAD-DEPENDENT
START OF DELIVERY**

DELIVERY DIFFERENCE

Rated speed rpm : 1400
 Aneroid pressure hPa : 1000
 Del. quantity cm³/1000 strokes : -28.0
 Tolerance cm³/1000 strokes : 3.0
 Check tolerance cm³/1000S. : 4.0
 Shutoff solenoid Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1400
 Aneroid pressure hPa : 1000
 Del. quantity cm³/1000 strokes : -0.8
 Tolerance cm³/1000 strokes : 0.1
 Check tolerance cm³/1000S. : 0.1
 Shutoff solenoid Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1400
 Aneroid pressure hPa : 1000
 Del. quantity cm³/1000 strokes : 1.5
 Tolerance cm³/1000 strokes : 1.5
 Check tolerance cm³/1000S. : 1.5
 Shutoff solenoid Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1400
 Aneroid pressure hPa : 1000
 Tolerance mm : 0.2
 Check tolerance mm : 0.4

Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 22.0
Tolerance
cm³/1000 strokes : 8.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 200
Del. quantity
cm³/1000 strokes : 80.0
Tolerance
cm³/1000 strokes : 25.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/
HBA stroke mm : 6.2
Dimension K mm : 3,3
Tolerance mm : +0,1
Dimension KF mm : 8,4
Tolerance mm : +0,2
MS1 dimension mm : 1,6
Tolerance mm : +0,15/-0,1
KSB travel mm : 5,7

CONTROL LEVER POSITION
SET

Control lever
position YA mm : 33,0..35,0

Control lever
position YB mm : 48,9..54,9

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.02.95
Test oil : ISO 4113

Part no. : 0 460 494 400
Pump designation : VE4/9F2100R547-1

Customer-spec. information

Customer : FIAT-AUTO
Motor : M 721 CT 19.S
Power KW : 60.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.75

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1500
Aneroid pressure hPa : 1000
Setting mm : 6.0
Tolerance mm : 0.2
Shutoff solenoid Volt : 12
KSB/AFB Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1500
Aneroid pressure hPa : 1000
Setting hPa : 6.1
Tolerance hPa : 0.3
Shutoff solenoid Volt : 12
KSB/AFB Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1500
Aneroid pressure hPa : 1000
Del. quantity cm³/1000 strokes : 46.0
Tolerance cm³/1000 strokes : 0.5
Spread cm³/1000 strokes : 2.5
Check tolerance cm³/1000s. : 2.5
Shutoff solenoid Volt : 12
KSB/AFB Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 600
Del. quantity cm³/1000 strokes : 41.5
Tolerance cm³/1000 strokes : 0.5
Shutoff solenoid Volt : 12
Check tolerance cm³/1000s. : 2.5
KSB/AFB Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING		Del. quantity cm ³ /1000 strokes : -0.2
Rated speed rpm	: 600	Tolerance cm ³ /1000 strokes : 0.1
Del. quantity cm ³ /1000 strokes	: 5.0	Shutoff solenoid Volt : 12
Tolerance cm ³ /1000 strokes	: 1.0	KSB/AFB Volt : 12
Shutoff solenoid Volt	: 12	 TIMING-DEVICE TRAVEL DIFFERENCE
KSB/AFB Volt	: 12	Rated speed rpm : 1500
FULL-LOAD SPEED REGULATION		Del. quantity cm ³ /1000 strokes : -0.9
Rated speed rpm	: 2300	Tolerance cm ³ /1000 strokes : 0.1
Pressure hPa	: 1000	Shutoff solenoid Volt : 12
Del. quantity cm ³ /1000 strokes	: 34.0	KSB/AFB Volt : 12
Tolerance cm ³ /1000 strokes	: 3.0	 INJECTION-PUMP TEST SPECIFICATIONS
Shutoff solenoid Volt	: 12	 TIMING DEVICE CHARACTERISTIC
KSB/AFB Volt	: 12	Rated speed rpm : 2100
STARTING FUEL DELIVERY		Aneroid pressure hPa : 1000
Rated speed rpm	: 100	Tolerance mm : 0.4
Del. quantity cm ³ /1000 strokes	: 65.0	Check tolerance mm : 0.7
Tolerance cm ³ /1000 strokes	: 15.0	Shutoff solenoid Volt : 12
Shutoff solenoid Volt	: 12	KSB/AFB Volt : 12
KSB/AFB Volt	: 12	Rated speed rpm : 800
LOAD-DEPENDENT START OF DELIVERY SETTING		Aneroid pressure hPa : 1000
DELIVERY DIFFERENCE		SV travel mm : 2.1
Rated speed rpm	: 1500	Tolerance mm : 0.4
Del. quantity cm ³ /1000 strokes	: -10.0	Check tolerance mm : 0.7
Tolerance cm ³ /1000 strokes	: 1.0	Shutoff solenoid Volt : 12
Shutoff solenoid Volt	: 12	KSB/AFB Volt : 12
KSB/AFB Volt	: 12	Rated speed rpm : 500
PRESSURE DIFFERENCE		Aneroid pressure hPa : 1000
Rated speed rpm	: 1500	SV travel mm : 4.0
		Tolerance mm : 0.8
		Check tolerance mm : 1.5
		Shutoff solenoid Volt : 12

Rated speed rpm	:	1000	Check tolerance ccm/10s	:	41.6
Aneroid pressure hPa	:	1000	Shutoff solenoid Volt	:	12
SV travel mm	:	6.0	KSB/AFB Volt	:	12
Tolerance mm	:	1.5	DELIVERY AND BREAKAWAY CHARACTERISTIC		
Check tolerance mm	:	2.0	Rated speed rpm	:	2300
Shutoff solenoid Volt	:	12	Aneroid pressure	:	1000
SUPPLY PUMP PRESSURE CHARACTERISTIC			hPa	:	1000
Rated speed rpm	:	2100	Del. quantity cm ³ /1000 strokes	:	34.0
Aneroid pressure hPa	:	1000	Tolerance cm ³ /1000 strokes	:	3.0
Supply pump pressure bar	:	7.8	Check tolerance cm ³ /1000s.	:	5.0
Tolerance hPa	:	0.3	Shutoff solenoid Volt	:	12
Shutoff solenoid Volt	:	12	KSB/AFB Volt	:	12
KSB/AFB Volt	:	12	Rated speed rpm	:	2650
Rated speed rpm	:	800	Aneroid pressure	:	1000
Aneroid pressure hPa	:	1000	hPa	:	1000
Supply pump pressure bar	:	4.0	Del. quantity cm ³ /1000 strokes	:	3.5
Tolerance hPa	:	0.3	Shutoff solenoid Volt	:	12
Shutoff solenoid Volt	:	12	KSB/AFB Volt	:	12
KSB/AFB Volt	:	12	Rated speed rpm	:	2450
OVERFLOW QUANTITY			Aneroid pressure	:	1000
Rated speed rpm	:	600	hPa	:	1000
Overflow quantity ccm/10s	:	97.2	Del. quantity cm ³ /1000 strokes	:	17.0
Tolerance ccm/10s	:	22.2	Tolerance cm ³ /1000 strokes	:	4.0
Check tolerance ccm/10s	:	22.2	Check tolerance cm ³ /1000s.	:	5.0
Shutoff solenoid Volt	:	12	Shutoff solenoid Volt	:	12
KSB/AFB Volt	:	12	KSB/AFB Volt	:	12
Rated speed rpm	:	2100	Rated speed rpm	:	900
Aneroid pressure hPa	:	1000	Aneroid pressure	:	350
Overflow quantity ccm/10s	:	138.8	LDA/ HBA stroke mm	:	5.2
Tolerance ccm/10s	:	41.6	Del. quantity cm ³ /1000 strokes	:	46.5
			Tolerance cm ³ /1000 strokes	:	0.5
			Check tolerance cm ³ /1000s.	:	2.5

Shutoff solenoid			
Volt	:	12	KSB/AFB Volt : 12
KSB/AFB Volt	:	12	
Rated speed rpm	:	2100	
Aneroid pressure			
hPa	:	1000	RESIDUAL QUANTITY
Del. quantity			
cm ³ /1000 strokes	:	46.5	Rated speed rpm : 550
Tolerance			
cm ³ /1000 strokes	:	1.5	Del. quantity : 7.0
Check tolerance			
cm ³ /1000S.	:	2.5	Tolerance : 1.5
Shutoff solenoid			
Volt	:	12	Shutoff solenoid
KSB/AFB Volt	:	12	Volt : 12
Rated speed rpm	:	900	KSB/AFB Volt : 12
Aneroid pressure			
hPa	:	1000	
Del. quantity			
cm ³ /1000 strokes	:	48.5	CHECKING LOAD-DEPENDENT
Tolerance			START OF DELIVERY
cm ³ /1000 strokes	:	1.5	
Check tolerance			
cm ³ /1000S.	:	2.5	DELIVERY DIFFERENCE
Shutoff solenoid			
Volt	:	12	Rated speed rpm : 1500
KSB/AFB Volt	:	12	Del. quantity : -14.0
Rated speed rpm	:	1500	cm ³ /1000 strokes : 4.0
Aneroid pressure			
hPa	:	1000	Check tolerance : 4.0
Del. quantity			
cm ³ /1000 strokes	:	46.0	Shutoff solenoid
Tolerance			Volt : 12
cm ³ /1000 strokes	:	0.5	KSB/AFB Volt : 12
Check tolerance			
cm ³ /1000S.	:	2.0	TIMING-DEVICE TRAVEL DIFFERENCE
Shutoff solenoid			
Volt	:	12	Rated speed rpm : 1500
			Del. quantity : -0.9
ELECTR. SHUTOFF			cm ³ /1000 strokes : 0.1
CONTROL LEVER, IDLE STOP			
Rated speed rpm	:	450	Check tolerance : 0.1
Del. quantity			
cm ³ /1000 strokes	:	1.5	Shutoff solenoid
Tolerance			Volt : 12
cm ³ /1000 strokes	:	1.5	KSB/AFB Volt : 12
Check tolerance			
cm ³ /1000S.	:	1.5	DELIVERY DIFFERENCE
Spread			
cm ³ /1000 strokes	:	5.0	Rated speed rpm : 1500
			Del. quantity : 1.5
			cm ³ /1000 strokes : 1.5
			Tolerance : 1.5

Check tolerance
cm³/1000s. : 1.5
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

Control lever
position YA mm : 37,2..39,2
Control lever
position YB mm : 36,6..45,4

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1500
Tolerance mm : 0.3
Check
tolerance mm : 0.4
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

End of test-specification sheet

START TRANSITION

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 40.0
Tolerance
cm³/1000 strokes : 5.0
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

Rated speed rpm : 220
Del. quantity
cm³/1000 strokes : 65.0
Tolerance
cm³/1000 strokes : 13.0
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/
HBA stroke mm : 5.2
Dimension K mm : 3,3
Tolerance mm : +0,1
Dimension KF mm : 5,4
Tolerance mm : +0,1
Dimension MS mm : 1,2
Tolerance mm : +0,2

CONTROL LEVER POSITION SET

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.08.94
Test oil : ISO 4113

Part no. : 0 460 494 349
Pump designation : VE4/9F2100R548

Customer-spec. information
Customer : FIAT-AUTO
Motor : M705 VT19.D
Power KW : 60.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.75

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1500
Aneroid pressure hPa : 1000
Setting mm : 6.0
Tolerance mm : 0.2
Shutoff solenoid Volt : 12
KSB/AFB Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1500
Aneroid pressure hPa : 1000
Setting hPa : 6.1
Tolerance hPa : 0.3
Shutoff solenoid Volt : 12
KSB/AFB Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1500
Aneroid pressure hPa : 1000
Del. quantity cm³/1000 strokes : 46.0
Tolerance cm³/1000 strokes : 0.5
Spread cm³/1000 strokes : 2.5
Check tolerance cm³/1000S. : 2.5
Shutoff solenoid Volt : 12
KSB/AFB Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 600
Del. quantity cm³/1000 strokes : 41.5
Tolerance cm³/1000 strokes : 0.5
Shutoff solenoid Volt : 12
Check tolerance cm³/1000S. : 2.5
KSB/AFB Volt : 12

HOUSING-FIXED IDLE SPRING
RESIDUAL QUANTITY SETTING

Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 5.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2300
Pressure hPa : 1000
Del. quantity
cm³/1000 strokes : 34.0
Tolerance
cm³/1000 strokes : 3.0
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 65.0
Tolerance
cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

LOAD-DEPENDENT START OF DELIVERY
SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : -10.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1500

Del. quantity
cm³/1000 strokes : -0.2
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : -0.9
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2100
Aneroid pressure
hPa : 1000
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

Rated speed rpm : 800
Aneroid pressure
hPa : 1000

SV travel mm : 2.1
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

Rated speed rpm : 500
Aneroid pressure
hPa : 1000

SV travel mm : 4.0
Tolerance mm : 0.8
Check
tolerance mm : 1.5
Shutoff solenoid
Volt : 12

Rated speed rpm	:	1000	Check tolerance ccm/10s	:	41.6
Aneroid pressure hPa	:	1000	Shutoff solenoid Volt	:	12
SV travel mm	:	6.0			
Tolerance mm	:	1.5			
Check tolerance mm	:	2.0			
Shutoff solenoid Volt	:	12			
SUPPLY PUMP PRESSURE CHARACTERISTIC			DELIVERY AND BREAKAWAY CHARACTERISTIC		
Rated speed rpm	:	2100	Rated speed rpm	:	2300
Aneroid pressure hPa	:	1000	Aneroid pressure hPa	:	1000
Supply pump pressure bar	:	7.8	Del. quantity cm ³ /1000 strokes	:	34.0
Tolerance hPa	:	0.3	Tolerance cm ³ /1000 strokes	:	3.0
Shutoff solenoid Volt	:	12	Check tolerance cm ³ /1000S.	:	5.0
			Shutoff solenoid Volt	:	12
			KSB/AFB Volt	:	12
Rated speed rpm	:	800	Rated speed rpm	:	2650
Aneroid pressure hPa	:	1000	Aneroid pressure hPa	:	1000
Supply pump pressure bar	:	4.0	Del. quantity cm ³ /1000 strokes	:	3.5
Tolerance hPa	:	0.3	Shutoff solenoid Volt	:	12
Shutoff solenoid Volt	:	12			
			KSB/AFB Volt	:	12
KSB/AFB Volt	:	12	Rated speed rpm	:	2450
OVERFLOW QUANTITY			Aneroid pressure hPa	:	1000
Rated speed rpm	:	600	Del. quantity cm ³ /1000 strokes	:	17.0
Overflow quantity ccm/10s	:	97.2	Tolerance cm ³ /1000 strokes	:	4.0
Tolerance ccm/10s	:	22.2	Check tolerance cm ³ /1000S.	:	5.0
Check tolerance ccm/10s	:	22.2	Shutoff solenoid Volt	:	12
Shutoff solenoid Volt	:	12			
			KSB/AFB Volt	:	12
KSB/AFB Volt	:	12	Rated speed rpm	:	900
			Aneroid pressure hPa	:	350
			LDA/ HBA stroke mm	:	5.2
			Del. quantity cm ³ /1000 strokes	:	46.5
			Tolerance cm ³ /1000 strokes	:	0.5
			Check tolerance cm ³ /1000S.	:	2.5

Shutoff solenoid			
Volt	:	12	
KSB/AFB Volt	:	12	
Rated speed rpm	:	2100	
Aneroid pressure			
hPa	:	1000	
Del. quantity			
cm ³ /1000 strokes	:	46.5	
Tolerance			
cm ³ /1000 strokes	:	1.5	
Check tolerance			
cm ³ /1000S.	:	2.5	
Shutoff solenoid			
Volt	:	12	
KSB/AFB Volt	:	12	
Rated speed rpm	:	900	
Aneroid pressure			
hPa	:	1000	
Del. quantity			
cm ³ /1000 strokes	:	48.5	
Tolerance			
cm ³ /1000 strokes	:	1.5	
Check tolerance			
cm ³ /1000S.	:	2.5	
Shutoff solenoid			
Volt	:	12	
KSB/AFB Volt	:	12	
Rated speed rpm	:	1500	
Aneroid pressure			
hPa	:	1000	
Del. quantity			
cm ³ /1000 strokes	:	46.0	
Tolerance			
cm ³ /1000 strokes	:	0.5	
Check tolerance			
cm ³ /1000S.	:	2.0	
Shutoff solenoid			
Volt	:	12	
<hr/>			
ELECTR. SHUTOFF			
CONTROL LEVER, IDLE STOP			
Rated speed rpm	:	450	
Del. quantity			
cm ³ /1000 strokes	:	1.5	
Tolerance			
cm ³ /1000 strokes	:	1.5	
Check tolerance			
cm ³ /1000S.	:	1.5	
Spread			
cm ³ /1000 strokes	:	5.0	
<hr/>			
KSB/AFB	Volt	:	12
<hr/>			
RESIDUAL QUANTITY			
Rated speed rpm	:	550	
Del. quantity			
cm ³ /1000 strokes	:	7.0	
Tolerance			
cm ³ /1000 strokes	:	1.5	
Shutoff solenoid			
Volt	:	12	
KSB/AFB	Volt	:	12
<hr/>			
CHECKING LOAD-DEPENDENT			
START OF DELIVERY			
<hr/>			
DELIVERY DIFFERENCE			
Rated speed rpm	:	1500	
Del. quantity			
cm ³ /1000 strokes	:	-14.0	
Tolerance			
cm ³ /1000 strokes	:	4.0	
Check tolerance			
cm ³ /1000S.	:	4.0	
Shutoff solenoid			
Volt	:	12	
KSB/AFB	Volt	:	12
<hr/>			
TIMING-DEVICE TRAVEL DIFFERENCE			
Rated speed rpm	:	1500	
Del. quantity			
cm ³ /1000 strokes	:	-0.9	
Tolerance			
cm ³ /1000 strokes	:	0.1	
Check tolerance			
cm ³ /1000S.	:	0.1	
Shutoff solenoid			
Volt	:	12	
KSB/AFB	Volt	:	12
<hr/>			
DELIVERY DIFFERENCE			
Rated speed rpm	:	1500	
Del. quantity			
cm ³ /1000 strokes	:	1.5	
Tolerance			
cm ³ /1000 strokes	:	1.5	

Check tolerance cm³/1000S. : 1.5
 Shutoff solenoid Volt : 12
 KSB/AFB Volt : 12
TIMING-DEVICE TRAVEL DIFFERENCE
 Rated speed rpm : 1500
 Tolerance mm : 0.3
 Check tolerance mm : 0.3
 Shutoff solenoid Volt : 12
 KSB/AFB Volt : 12

EXHAUST-GAS RECIRCULATION

Rated speed rpm : 1000
 Aneroid pressure hPa : 1000
 Del. quantity cm³/1000 strokes : 20.0
 Tolerance cm³/1000 strokes : 1.0
 Check tolerance cm³/1000S. : 2.5
 Shutoff solenoid Volt : 12
 KSB/AFB Volt : 12

START TRANSITION

Rated speed rpm : 350
 Del. quantity cm³/1000 strokes : 40.0
 Tolerance cm³/1000 strokes : 5.0
 Shutoff solenoid Volt : 12
 KSB/AFB Volt : 12

Rated speed rpm : 220
 Del. quantity cm³/1000 strokes : 65.0
 Tolerance cm³/1000 strokes : 13.0
 Shutoff solenoid Volt : 12
 KSB/AFB Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/
 HBA stroke mm : 5,2
 Dimension K mm : 3,3
 Tolerance mm : ±0,1
 Dimension KF mm : 5,4
 Tolerance mm : ±0,2
 Dimension MS mm : 1,2
 Tolerance mm : ±0,2
POTENTIOMETER SET
 1. measurement voltage Volt : 5,0
 1. measurement voltage Volt : 0,8

MICROSWITCH SET
 mm : ARF 12,0
CONTROL LEVER POSITION SET
 Control lever position YA mm : 37,2..39,2
 Control lever position YB mm : 36,6..45,4

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 24.02.95
Test oil : ISO 4113

Part no. : 0 460 494 402
Pump designation : VE4/9F2100R548-1

Customer-spec. information

Customer : FIAT-AUTO
Motor : M721 CT19.N
Power KW : 60.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.75

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1500
Aneroid pressure hPa : 1000
Setting mm : 6.0
Tolerance mm : 0.2
Shutoff solenoid Volt : 12
KSB/AFB Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1500
Aneroid pressure hPa : 1000
Setting hPa : 6.1
Tolerance hPa : 0.3
Shutoff solenoid Volt : 12
KSB/AFB Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1500
Aneroid pressure hPa : 1000
Del. quantity cm³/1000 strokes : 46.0
Tolerance cm³/1000 strokes : 0.5
Spread cm³/1000 strokes : 2.5
Check tolerance cm³/1000S. : 2.5
Shutoff solenoid Volt : 12
KSB/AFB Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 600
Del. quantity cm³/1000 strokes : 41.5
Tolerance cm³/1000 strokes : 0.5
Shutoff solenoid Volt : 12
Check tolerance cm³/1000S. : 2.5
KSB/AFB Volt : 12

HOUSING-FIXED IDLE SPRING
RESIDUAL QUANTITY SETTING

Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 5.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2300
Pressure hPa : 1000
Del. quantity
cm³/1000 strokes : 34.0
Tolerance
cm³/1000 strokes : 3.0
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 65.0
Tolerance
cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

LOAD-DEPENDENT START OF DELIVERY
SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : -10.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1500

Del. quantity
cm³/1000 strokes : -0.2
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : -0.9
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2100
Aneroid pressure
hPa : 1000
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

Rated speed rpm : 800
Aneroid pressure
hPa : 1000

SV travel mm : 2.1
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

Rated speed rpm : 500
Aneroid pressure
hPa : 1000

SV travel mm : 4.0
Tolerance mm : 0.8
Check
tolerance mm : 1.5
Shutoff solenoid
Volt : 12

Rated speed rpm	:	1000	Check tolerance ccm/10s	:	41.6
Aneroid pressure hPa	:	1000	Shutoff solenoid Volt	:	12
SV travel mm	:	6.0	KSB/AFB Volt	:	12
Tolerance mm	:	1.5	DELIVERY AND BREAKAWAY CHARACTERISTIC		
Check tolerance mm	:	2.0	Rated speed rpm	:	2300
Shutoff solenoid Volt	:	12	Aneroid pressure hPa	:	1000
SUPPLY PUMP PRESSURE CHARACTERISTIC					
Rated speed rpm	:	2100	Del. quantity cm ³ /1000 strokes	:	34.0
Aneroid pressure hPa	:	1000	Tolerance cm ³ /1000 strokes	:	3.0
Supply pump pressure bar	:	7.8	Check tolerance cm ³ /1000S.	:	5.0
Tolerance hPa	:	0.3	Shutoff solenoid Volt	:	12
Shutoff solenoid Volt	:	12	KSB/AFB Volt	:	12
KSB/AFB Volt	:	12	Rated speed rpm	:	2650
Rated speed rpm	:	800	Aneroid pressure hPa	:	1000
Aneroid pressure hPa	:	1000	Del. quantity cm ³ /1000 strokes	:	3.5
Supply pump pressure bar	:	4.0	Shutoff solenoid Volt	:	12
Tolerance hPa	:	0.3	KSB/AFB Volt	:	12
Shutoff solenoid Volt	:	12	Rated speed rpm	:	2450
KSB/AFB Volt	:	12	Aneroid pressure hPa	:	1000
OVERFLOW QUANTITY					
Rated speed rpm	:	600	Del. quantity cm ³ /1000 strokes	:	17.0
Overflow quantity ccm/10s	:	97.2	Tolerance cm ³ /1000 strokes	:	4.0
Tolerance ccm/10s	:	22.2	Check tolerance cm ³ /1000S.	:	5.0
Check tolerance ccm/10s	:	22.2	Shutoff solenoid Volt	:	12
Shutoff solenoid Volt	:	12	KSB/AFB Volt	:	12
KSB/AFB Volt	:	12	Rated speed rpm	:	900
Rated speed rpm	:	2100	Aneroid pressure hPa	:	350
Aneroid pressure hPa	:	1000	LDA/ HBA stroke mm	:	5.2
Overflow quantity ccm/10s	:	138.8	Del. quantity cm ³ /1000 strokes	:	46.5
Tolerance ccm/10s	:	41.6	Tolerance cm ³ /1000 strokes	:	0.5
			Check tolerance cm ³ /1000S.	:	2.5

Shutoff solenoid			
Volt	:	12	
KSB/AFB Volt	:	12	
Rated speed rpm	:	2100	
Aneroid pressure			
hPa	:	1000	
Del. quantity			
cm ³ /1000 strokes	:	46.5	
Tolerance			
cm ³ /1000 strokes	:	1.5	
Check tolerance			
cm ³ /1000S.	:	2.5	
Shutoff solenoid			
Volt	:	12	
KSB/AFB Volt	:	12	
Rated speed rpm	:	900	
Aneroid pressure			
hPa	:	1000	
Del. quantity			
cm ³ /1000 strokes	:	48.5	
Tolerance			
cm ³ /1000 strokes	:	1.5	
Check tolerance			
cm ³ /1000S.	:	2.5	
Shutoff solenoid			
Volt	:	12	
KSB/AFB Volt	:	12	
Rated speed rpm	:	1500	
Aneroid pressure			
hPa	:	1000	
Del. quantity			
cm ³ /1000 strokes	:	46.0	
Tolerance			
cm ³ /1000 strokes	:	0.5	
Check tolerance			
cm ³ /1000S.	:	2.0	
Shutoff solenoid			
Volt	:	12	
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ELECTR. SHUTOFF			
CONTROL LEVER, IDLE STOP			
Rated speed rpm	:	450	
Del. quantity			
cm ³ /1000 strokes	:	1.5	
Tolerance			
cm ³ /1000 strokes	:	1.5	
Check tolerance			
cm ³ /1000S.	:	1.5	
Spread			
cm ³ /1000 strokes	:	5.0	
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KSB/AFB Volt	:	12	
RESIDUAL QUANTITY			
Rated speed rpm	:	550	
Del. quantity			
cm ³ /1000 strokes	:	7.0	
Tolerance			
cm ³ /1000 strokes	:	1.5	
Shutoff solenoid			
Volt	:	12	
KSB/AFB Volt	:	12	
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CHECKING LOAD-DEPENDENT			
START OF DELIVERY			
<hr/>			
DELIVERY DIFFERENCE			
Rated speed rpm	:	1500	
Del. quantity			
cm ³ /1000 strokes	:	-14.0	
Tolerance			
cm ³ /1000 strokes	:	4.0	
Check tolerance			
cm ³ /1000S.	:	4.0	
Shutoff solenoid			
Volt	:	12	
KSB/AFB Volt	:	12	
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TIMING-DEVICE TRAVEL DIFFERENCE			
Rated speed rpm	:	1500	
Del. quantity			
cm ³ /1000 strokes	:	-0.9	
Tolerance			
cm ³ /1000 strokes	:	0.1	
Check tolerance			
cm ³ /1000S.	:	0.1	
Shutoff solenoid			
Volt	:	12	
KSB/AFB Volt	:	12	
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DELIVERY DIFFERENCE			
Rated speed rpm	:	1500	
Del. quantity			
cm ³ /1000 strokes	:	1.5	
Tolerance			
cm ³ /1000 strokes	:	1.5	

Check tolerance
cm³/1000S. : 1.5
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1500
Tolerance mm : 0.3
Check
tolerance mm : 0.3
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

EXHAUST-GAS RECIRCULATION

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : 1.0
Check tolerance
cm³/1000S. : 2.5
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

START TRANSITION

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 40.0
Tolerance
cm³/1000 strokes : 5.0
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

Rated speed rpm : 220
Del. quantity
cm³/1000 strokes : 65.0
Tolerance
cm³/1000 strokes : 13.0
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/
HBA stroke mm : 5.2
Dimension K mm : 3,3
Tolerance mm : +0,1
Dimension KF mm : 5,4
Tolerance mm : +0,2
Dimension MS mm : 1,2
Tolerance mm : +0,2

POTENTIOMETER SET

1. measurement
voltage Volt : 5,0
1. measurement
voltage Volt : 1,85

MICROSWITCH SET

: ARF 12,0

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.03.95
Test oil : ISO 4113

Part no. : 0 460 494 401
Pump designation : VE4/9F2300R549-1

Customer-spec. information

Customer : FIAT-AUTO
Motor : M721 CA 19.S
Power KW : 51.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test Lines : 1 680 750 073

Outside dia. mm : 6.00
x inside dia. mm : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1500
Setting mm : 5.9
Tolerance mm : 0.2
Shutoff solenoid Volt : 12
KSB/AFB Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1500
Setting hPa : 5.9
Tolerance hPa : 0.3
Shutoff solenoid Volt : 12
KSB/AFB Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : 34.0
Tolerance
cm³/1000 strokes : 0.5
Spread
cm³/1000 strokes : 3.0
Shutoff solenoid Volt : 12
KSB/AFB Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 530
Del. quantity
cm³/1000 strokes : 2.5
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid Volt : 12
KSB/AFB Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2475
Del. quantity
cm³/1000 strokes : 22.0
Tolerance
cm³/1000 strokes : 3.0
Shutoff solenoid Volt : 12

Rated speed rpm	:	2300	KSB/AFB Volt	:	12	
Overflow quantity ccm/10s	:	97.2	Rated speed rpm	:	2300	
Tolerance ccm/10s	:	41.6	Del. quantity cm3/1000 strokes	:	33.0	
Check tolerance ccm/10s	:	41.6	Tolerance cm3/1000 strokes	:	1.3	
Shutoff solenoid Volt	:	12	Check tolerance cm3/1000S.	:	2.0	
KSB/AFB Volt	:	12	Shutoff solenoid Volt	:	12	
Rated speed rpm	:	600	KSB/AFB Volt	:	12	
Overflow quantity ccm/10s	:	63.8	Rated speed rpm	:	1000	
Tolerance ccm/10s	:	22.2	Del. quantity cm3/1000 strokes	:	32.7	
Check tolerance ccm/10s	:	22.2	Tolerance cm3/1000 strokes	:	1.5	
Shutoff solenoid Volt	:	12	Check tolerance cm3/1000S.	:	2.5	
KSB/AFB Volt	:	12	Shutoff solenoid Volt	:	12	
DELIVERY AND BREAKAWAY CHARACTERISTIC						
Rated speed rpm	:	2475	KSB/AFB Volt	:	12	
Del. quantity cm3/1000 strokes	:	22.0	Rated speed rpm	:	600	
Tolerance cm3/1000 strokes	:	3.0	Del. quantity cm3/1000 strokes	:	30.5	
Check tolerance cm3/1000S.	:	5.0	Tolerance cm3/1000 strokes	:	1.5	
Shutoff solenoid Volt	:	12	Check tolerance cm3/1000S.	:	2.0	
KSB/AFB Volt	:	12	Shutoff solenoid Volt	:	12	
Rated speed rpm	:	2700	KSB/AFB Volt	:	12	
Del. quantity cm3/1000 strokes	:	6.0	Rated speed rpm	:	1500	
Check tolerance cm3/1000S.	:	6.0	Del. quantity cm3/1000 strokes	:	34.0	
Shutoff solenoid Volt	:	12	Tolerance cm3/1000 strokes	:	0.5	
KSB/AFB Volt	:	12	Check tolerance cm3/1000S.	:	2.0	
Rated speed rpm	:	2900	Shutoff solenoid Volt	:	12	
Del. quantity cm3/1000 strokes	:	1.5	<hr/>			
Tolerance cm3/1000 strokes	:	1.5	ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP			
Check tolerance cm3/1000S.	:	1.5	Rated speed rpm	:	450	
Shutoff solenoid Volt	:	12	Del. quantity cm3/1000 strokes	:	1.5	

Check tolerance
cm³/1000S. : 1.5
Spread
cm³/1000 strokes : 5.0

HOUSING-FIXED IDLE SPRING
HIGH IDLE

Rated speed rpm : 530
Del. quantity
cm³/1000 strokes : 8.0
Tolerance
cm³/1000 strokes : 2.5
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

RESIDUAL QUANTITY

Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 4.0
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 2.0
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

IDLE DELIVERY

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : 3.0
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

CHECKING LOAD-DEPENDENT
START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : -13.0
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 4.0
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : -0.7
Tolerance
cm³/1000 strokes : 0.1
Check tolerance
cm³/1000S. : 0.1
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1500
Tolerance mm : 0.3
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

START TRANSITION

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 30.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

Rated speed rpm : 130
Del. quantity
cm³/1000 strokes : 60.0

Tolerance
cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : $\pm 0,1$
Dimension KF mm : 5,5
Tolerance mm : $\pm 0,2$
Dimension MS mm : 1,5
Tolerance mm : $\pm 0,2$

CONTROL LEVER POSITION
SET

Control lever
position YA mm : 37,2..39,2

Control lever
position YB mm : 41,1..49,5

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.02.96
Test oil : ISO 4113

Part no. : 0 460 426 241
Pump designation : VE6/12F1250R556-1

Customer-spec. information

Customer : PERKINS
Motor : Q20 Phaser 195Ti

TEST BENCH REQUIREMENTS

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 027

Opening pressure
bar : 250
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 1,25
Tolerance mm : +0,02
Outlet : C

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1000
Aneroid pressure
hPa : 1500

Setting mm : 2.0
Tolerance mm : 0.1
Shutoff solenoid
Volt : 24

SUPPLY PUMP PRESSURE

Rated speed rpm : 1000
Aneroid pressure
hPa : 1500

Setting hPa : 7.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 24

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 900
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 95.5
Tolerance
cm³/1000 strokes : 0.5
Spread
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000s. : 5.0
Shutoff solenoid
Volt : 24

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 57.0
Tolerance
cm³/1000 strokes : 0.5
Shutoff solenoid
Volt : 24
Check tolerance
cm³/1000s. : 5.0

IDLE SETTING

Rated speed rpm : 280
Del. quantity
cm³/1000 strokes : 11.0

Tolerance
 cm³/1000 strokes : 2.0
 Shutoff solenoid
 Volt : 24
 Spread
 cm³/1000 strokes : 6.5
 Check tolerance
 cm³/1000S. : 6.5

FULL-LOAD SPEED REGULATION

Rated speed rpm : 1400
 Pressure hPa : 1500
 Del. quantity
 cm³/1000 strokes : 45.0
 Tolerance
 cm³/1000 strokes : 3.0
 Shutoff solenoid
 Volt : 24

STARTING FUEL DELIVERY

Rated speed rpm : 100
 Del. quantity
 cm³/1000 strokes : 160.0
 Tolerance
 cm³/1000 strokes : 30.0
 Shutoff solenoid
 Volt : 24

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 1100
 Aneroid pressure
 hPa : 1500
 SV travel mm : 2.7
 Tolerance mm : 0.3
 Check
 tolerance mm : 0.7
 Shutoff solenoid
 Volt : 24

Rated speed rpm : 900
 Aneroid pressure
 hPa : 1500
 SV travel mm : 1.1
 Tolerance mm : 0.3
 Check
 tolerance mm : 0.7
 Shutoff solenoid
 Volt : 24

Rated speed rpm : 1250
 Aneroid pressure
 hPa : 1500
 SV travel mm : 3.3
 Tolerance mm : 0.4
 Shutoff solenoid
 Volt : 24

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 1250
 Aneroid pressure
 hPa : 1500
 Supply pump
 pressure bar : 8.5
 Tolerance hPa : 0.3
 Shutoff solenoid
 Volt : 24

Rated speed rpm : 700
 Aneroid pressure
 hPa : 1500
 Supply pump
 pressure bar : 6.4
 Tolerance hPa : 0.3
 Shutoff solenoid
 Volt : 24

OVERFLOW QUANTITY

Rated speed rpm : 500
 Overflow quantity
 ccm/10s : 63.8
 Tolerance
 ccm/10s : 22.2

Check tolerance
 ccm/10s : 22.2
 Shutoff solenoid
 Volt : 24

Rated speed rpm : 1250
 Aneroid pressure
 hPa : 1500
 Overflow quantity
 ccm/10s : 97.2
 Tolerance
 ccm/10s : 41.6

Check tolerance
 ccm/10s : 41.6
 Shutoff solenoid
 Volt : 24

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 1400

Aneroid pressure
 hPa : 1500
 Del. quantity
 cm³/1000 strokes : 45.0
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 6.0
 Shutoff solenoid
 Volt : 24

Rated speed rpm : 1350
 Aneroid pressure
 hPa : 1500
 Del. quantity
 cm³/1000 strokes : 80.0
 Tolerance
 cm³/1000 strokes : 15.0
 Check tolerance
 cm³/1000S. : 15.0
 Shutoff solenoid
 Volt : 24

Rated speed rpm : 1480
 Aneroid pressure
 hPa : 1500
 Del. quantity
 cm³/1000 strokes : 1.5
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000S. : 1.5
 Shutoff solenoid
 Volt : 24

Rated speed rpm : 700
 Aneroid pressure
 hPa : 700
 Del. quantity
 cm³/1000 strokes : 82.0
 Tolerance
 cm³/1000 strokes : 0.5
 Check tolerance
 cm³/1000S. : 3.5
 Shutoff solenoid
 Volt : 24

Rated speed rpm : 1250
 Aneroid pressure
 hPa : 1500
 Del. quantity
 cm³/1000 strokes : 104.0
 Tolerance
 cm³/1000 strokes : 2.5
 Check tolerance
 cm³/1000S. : 3.5
 Shutoff solenoid
 Volt : 24

Rated speed rpm : 700

Aneroid pressure
 hPa : 1500
 Del. quantity
 cm³/1000 strokes : 97.0
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 4.0
 Shutoff solenoid
 Volt : 24

Rated speed rpm : 900
 Aneroid pressure
 hPa : 1500
 Del. quantity
 cm³/1000 strokes : 95.5
 Tolerance
 cm³/1000 strokes : 0.5
 Check tolerance
 cm³/1000S. : 3.5
 Shutoff solenoid
 Volt : 24

MECHANICAL SHUTOFF

Rated speed rpm : 1250
 Aneroid pressure
 hPa : 1500
 Del. quantity
 cm³/1000 strokes : 1.5
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000S. : 1.5
 Shutoff solenoid
 Volt : 24

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 280
 Del. quantity
 cm³/1000 strokes : 1.5
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000S. : 1.5

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 280
 Del. quantity
 cm³/1000 strokes : 1.5
 Tolerance
 cm³/1000 strokes : 1.5
 Spread
 cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 1.5

IDLE DELIVERY

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5
Shutoff solenoid
Volt : 24

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 5.0
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 5.0
Shutoff solenoid
Volt : 24

START TRANSITION

Rated speed rpm : 230
Del. quantity
cm³/1000 strokes : 70.0
Tolerance
cm³/1000 strokes : 20.0
Shutoff solenoid
Volt : 24

Rated speed rpm : 130
Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : 30.0
Shutoff solenoid
Volt : 24

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,7
Tolerance mm : +0,1
Dimension KF mm : 6,4
Tolerance mm : +0,2
MS1 dimension mm : 1,36
Tolerance mm : +0,15/-0,1
KSB travel mm : 8,5

CONTROL LEVER POSITION SET

Control lever
position YA mm : 37,2..38,2

Control lever
position YB mm : 44,9..53,5

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 27.07.95
Test oil : ISO 4113

Part no. : 0 460 426 230
Pump designation : VE6/12F1350R561

Customer-spec. information
Customer : IVECO-FIAT
Motor : 8060.45.4385

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 55
Tolerance °C : 1

Overflow
restriction mm : 0.75

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 027

Opening pressure
bar : 250
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1100
Aneroid pressure
hPa : 1000
Setting mm : 2.7
Tolerance mm : 0.1
Shutoff solenoid
Volt : 24

SUPPLY PUMP PRESSURE

Rated speed rpm : 1100
Aneroid pressure
hPa : 1000
Setting hPa : 8.2
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 24

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 700
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 65.0
Tolerance
cm³/1000 strokes : 0.5
Spread
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.0
Shutoff solenoid
Volt : 24

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 48.0
Tolerance
cm³/1000 strokes : 0.5
Shutoff solenoid
Volt : 24
Check tolerance
cm³/1000S. : 5.0

IDLE SETTING

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 24
Spread
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000s. : 5.0

FULL-LOAD SPEED REGULATION

Rated speed rpm : 1500
Pressure hPa : 1000
Del. quantity
cm³/1000 strokes : 40.0
Tolerance
cm³/1000 strokes : 3.0
Shutoff solenoid
Volt : 24

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 85.0
Tolerance
cm³/1000 strokes : 25.0
Shutoff solenoid
Volt : 24

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 1200
Aneroid pressure
hPa : 1000

SV travel mm : 3.8
Tolerance mm : 0.3
Shutoff solenoid
Volt : 24

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000

SV travel mm : 1.5
Tolerance mm : 0.3
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 24

Rated speed rpm : 1350
Aneroid pressure
hPa : 1000

SV travel mm : 4.9
Tolerance mm : 0.3

Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 24

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 1350
Aneroid pressure
hPa : 1000
Supply pump
pressure bar : 9.7
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 24

Rated speed rpm : 600
Aneroid pressure
hPa : 1000
Supply pump
pressure bar : 5.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 24

OVERFLOW QUANTITY

Rated speed rpm : 1350
Aneroid pressure
hPa : 1000
Overflow quantity
ccm/10s : 138.8
Tolerance
ccm/10s : 41.6

Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 24

Rated speed rpm : 600
Aneroid pressure
hPa : 1000
Overflow quantity
ccm/10s : 111.1
Tolerance
ccm/10s : 41.6

Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 24

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 40.0

Tolerance		Tolerance	
cm ³ /1000 strokes	: 3.0	cm ³ /1000 strokes	: 2.0
Check tolerance		Check tolerance	
cm ³ /1000S.	: 6.0	cm ³ /1000S.	: 3.5
Shutoff solenoid		Shutoff solenoid	
Volt	: 24	Volt	: 24
Rated speed rpm	: 1450	Rated speed rpm	: 600
Aneroid pressure		Aneroid pressure	
hPa	: 1000	hPa	: 1000
Del. quantity		Del. quantity	
cm ³ /1000 strokes	: 53.0	cm ³ /1000 strokes	: 68.0
Tolerance		Tolerance	
cm ³ /1000 strokes	: 8.0	cm ³ /1000 strokes	: 2.0
Check tolerance		Check tolerance	
cm ³ /1000S.	: 10.0	cm ³ /1000S.	: 3.5
Shutoff solenoid		Shutoff solenoid	
Volt	: 24	Volt	: 24
Rated speed rpm	: 1600	Rated speed rpm	: 700
Aneroid pressure		Aneroid pressure	
hPa	: 1000	hPa	: 1000
Del. quantity		Del. quantity	
cm ³ /1000 strokes	: 1.5	cm ³ /1000 strokes	: 65.0
Tolerance		Tolerance	
cm ³ /1000 strokes	: 1.5	cm ³ /1000 strokes	: 0.5
Check tolerance		Check tolerance	
cm ³ /1000S.	: 1.5	cm ³ /1000S.	: 3.5
Shutoff solenoid		Shutoff solenoid	
Volt	: 24	Volt	: 24
Rated speed rpm	: 600	ELECTR. SHUTOFF	
Aneroid pressure		CONTROL LEVER, IDLE STOP	
hPa	: 400		
Del. quantity		Rated speed rpm	: 350
cm ³ /1000 strokes	: 60.5	Del. quantity	
Tolerance		cm ³ /1000 strokes	: 1.5
cm ³ /1000 strokes	: 0.5	Tolerance	
Check tolerance		cm ³ /1000 strokes	: 1.5
cm ³ /1000S.	: 4.0	Check tolerance	
Shutoff solenoid		cm ³ /1000S.	: 1.5
Volt	: 24	Spread	
		cm ³ /1000 strokes	: 5.0
Rated speed rpm	: 1350	FULL-LOAD STOP CONTROL LEVER	
Aneroid pressure			
hPa	: 1000	Rated speed rpm	: 350
Del. quantity		Del. quantity	
cm ³ /1000 strokes	: 59.5	cm ³ /1000 strokes	: 1.5
Tolerance		Tolerance	
cm ³ /1000 strokes	: 1.5	cm ³ /1000 strokes	: 1.5
Check tolerance		Spread	
cm ³ /1000S.	: 3.5	cm ³ /1000 strokes	: 5.0
Shutoff solenoid		Check tolerance	
Volt	: 24	cm ³ /1000S.	: 1.5
		Spread	
Rated speed rpm	: 1200	cm ³ /1000 strokes	: 5.0
Aneroid pressure			
hPa	: 1000		
Del. quantity			
cm ³ /1000 strokes	: 61.0		

IDLE DELIVERY

Rated speed rpm : 425
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S.
Shutoff solenoid
Volt : 24

Rated speed rpm : 375
Del. quantity
cm³/1000 strokes : 5.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S.
Shutoff solenoid
Volt : 24

START TRANSITION

Rated speed rpm : 250
Del. quantity
cm³/1000 strokes : 40.0
Tolerance
cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 24

Rated speed rpm : 130
Del. quantity
cm³/1000 strokes : 85.0
Tolerance
cm³/1000 strokes : 25.0
Shutoff solenoid
Volt : 24

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,6
Tolerance mm : +0,1
Dimension KF mm : 6,0
Tolerance mm : +0,2
MS1 dimension mm : 1,6
Tolerance mm : +0,15/-0,1
KSB travel mm : 10,0

CONTROL LEVER POSITION SET

Control lever
position YA mm : 37,9..39,9
Control lever
position YB mm : 42,5..47,7

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.01.96
Test oil : ISO 4113

Part no. : 0 460 424 101
Pump designation : VE4/12F1200R568

Customer-spec. information

Customer : MAN
Motor : D 0824 LFL 01
Power KW : 114.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 110

Opening pressure
bar : 250
Tolerance bar : 3

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 840

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 850
Aneroid pressure hPa : 1500

Setting mm : 2.2
Tolerance mm : 0.2

KSB/AFB Volt : 24

SUPPLY PUMP PRESSURE

Rated speed rpm : 850
Aneroid pressure hPa : 1500

Setting hPa : 6.7
Tolerance hPa : 0.3

KSB/AFB Volt : 24

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1000
Aneroid pressure hPa : 1500

Del. quantity cm³/1000 strokes : 108.0

Tolerance cm³/1000 strokes : 0.5

Spread cm³/1000 strokes : 4.0

Check tolerance cm³/1000S. : 4.5

KSB/AFB Volt : 24

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 550
Del. quantity cm³/1000 strokes : 61.0

Tolerance cm³/1000 strokes : 0.5

Check tolerance cm³/1000S. : 4.5

KSB/AFB Volt : 24

IDLE SETTING

Rated speed rpm : 400
Del. quantity cm³/1000 strokes : 15.0

Tolerance cm³/1000 strokes : 2.0

Spread cm³/1000 strokes : 6.0

Check tolerance cm ³ /1000s.	:	6.5	SV travel mm	:	1.1
KSB/AFB Volt	:	24	Tolerance mm	:	0.4
FULL-LOAD SPEED REGULATION					
Rated speed rpm	:	1300	KSB/AFB Volt	:	24
Pressure hPa	:	1500	Rated speed rpm	:	1200
Del. quantity cm ³ /1000 strokes	:	75.0	Aneroid pressure hPa	:	1500
Tolerance cm ³ /1000 strokes	:	3.0	SV travel mm	:	4.9
KSB/AFB Volt	:	24	Tolerance mm	:	0.4
STARTING FUEL DELIVERY					
Rated speed rpm	:	100	KSB/AFB Volt	:	24
Del. quantity cm ³ /1000 strokes	:	135.0	SUPPLY PUMP PRESSURE CHARACTERISTIC		
Tolerance cm ³ /1000 strokes	:	30.0	Rated speed rpm	:	1200
KSB/AFB Volt	:	24	Aneroid pressure hPa	:	1500
SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP			Supply pump pressure bar	:	8.5
Rated speed rpm	:	100	Tolerance hPa	:	0.3
Del. quantity cm ³ /1000 strokes	:	45.0	KSB/AFB Volt	:	24
Tolerance cm ³ /1000 strokes	:	1.0	Rated speed rpm	:	550
KSB/AFB Volt	:	24	Aneroid pressure hPa	:	1500
INJECTION-PUMP TEST SPECIFICATIONS			Supply pump pressure bar	:	5.2
TIMING DEVICE CHARACTERISTIC			Tolerance hPa	:	0.3
Rated speed rpm	:	1000	KSB/AFB Volt	:	24
Aneroid pressure hPa	:	1500	OVERFLOW QUANTITY		
SV travel mm	:	4.0	Rated speed rpm	:	550
Tolerance mm	:	0.4	Overflow quantity ccm/10s	:	63.8
Check tolerance mm	:	0.7	Tolerance ccm/10s	:	22.2
KSB/AFB Volt	:	24	Check tolerance ccm/10s	:	22.2
Rated speed rpm	:	750	KSB/AFB Volt	:	24
Aneroid pressure hPa	:	1500	Rated speed rpm	:	1200

Check tolerance ccm/10s	:	41.6	+	KSB/AFB Volt	:	24
KSB/AFB Volt	:	24	+	Rated speed rpm	:	1200
DELIVERY AND BREAKAWAY CHARACTERISTIC						
Rated speed rpm	:	1300	+	Aneroid pressure hPa	:	1500
Aneroid pressure hPa	:	1500	+	Del. quantity cm ³ /1000 strokes	:	103.0
Del. quantity cm ³ /1000 strokes	:	75.0	+	Tolerance cm ³ /1000 strokes	:	2.5
Tolerance cm ³ /1000 strokes	:	3.0	+	Check tolerance cm ³ /1000S.	:	4.0
KSB/AFB Volt	:	24	+	KSB/AFB Volt	:	24
Rated speed rpm	:	1340	+	Rated speed rpm	:	700
Aneroid pressure hPa	:	1500	+	Aneroid pressure hPa	:	1500
Del. quantity cm ³ /1000 strokes	:	12.0	+	Del. quantity cm ³ /1000 strokes	:	112.5
Check tolerance cm ³ /1000S.	:		+	Tolerance cm ³ /1000 strokes	:	2.5
KSB/AFB Volt	:	24	+	Check tolerance cm ³ /1000S.	:	5.5
Rated speed rpm	:	1260	+	KSB/AFB Volt	:	24
Aneroid pressure hPa	:	1500	+	Rated speed rpm	:	850
Del. quantity cm ³ /1000 strokes	:	100.0	+	Aneroid pressure hPa	:	1500
Check tolerance cm ³ /1000S.	:	5.0	+	Del. quantity cm ³ /1000 strokes	:	114.0
KSB/AFB Volt	:		+	Tolerance cm ³ /1000 strokes	:	2.5
Rated speed rpm	:	137	+	Check tolerance cm ³ /1000S.	:	4.5
Aneroid pressure hPa	:	1500	+	KSB/AFB Volt	:	24
Del. quantity cm ³ /1000 strokes	:		+	Rated speed rpm	:	550
Tolerance cm ³ /1000 strokes	:	1.5	+	Aneroid pressure hPa	:	1500
Check tolerance cm ³ /1000S.	:	1.5	+	Del. quantity cm ³ /1000 strokes	:	114.0
KSB/AFB Volt	:	24	+	Tolerance cm ³ /1000 strokes	:	4.5
Rated speed rpm	:	550	+	Check tolerance cm ³ /1000S.	:	6.0
Aneroid pressure hPa	:	400	+	KSB/AFB Volt	:	24
LDA/ HBA stroke mm	:	7.6	+	Rated speed rpm	:	1000
Del. quantity cm ³ /1000 strokes	:	81.0	+	Aneroid pressure hPa	:	1500
Tolerance cm ³ /1000 strokes	:	0.5	+	Del. quantity cm ³ /1000 strokes	:	108.0
Check tolerance cm ³ /1000S.	:	2.5	+	Tolerance cm ³ /1000 strokes	:	0.5
			+	Check tolerance cm ³ /1000S.	:	2.5

MECHANICAL SHUTOFF

Rated speed rpm : 1200
Aneroid pressure hPa : 1500
Del. quantity cm³/1000 strokes : 1.5
Tolerance cm³/1000 strokes : 1.5
Spread cm³/1000 strokes : 5.0
Check tolerance cm³/1000S. : 1.5
Spread cm³/1000 strokes : 5.0
KSB/AFB Volt : 24

LDA/
HBA stroke mm : 7.6
Dimension K mm : 3,7
Tolerance mm : +0,1
Dimension KF mm : 6,4
Tolerance mm : +0,2
MS1 dimension mm : 1,5
Tolerance mm : +0,15/-0,1
KSB travel mm : 7,1

MICROSWITCH SET

mm : GST 71,9

CONTROL LEVER POSITION SET

Control lever
position YA mm : 37,4..40,4

Control lever
position YB mm : 35,4..40,6

End of test-specification sheet

START TRANSITION

Rated speed rpm : 430
Del. quantity cm³/1000 strokes : 68.0
Tolerance cm³/1000 strokes : 20.0
KSB/AFB Volt : 24

Rated speed rpm : 330
Del. quantity cm³/1000 strokes : 90.0
Tolerance cm³/1000 strokes : 15.0
KSB/AFB Volt : 24

ASSEMBLY AND ADJUSTMENT DIMENSIONS

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.11.95
Test oil : ISO 4113

Part no. : 0 460 494 353
Pump designation : VE4/9F2250R571

Customer-spec. information

Customer : OPEL
Motor : 1,7 DT-LC
Power KW : 50.0

TEST BENCH REQUIREMENTS

Calibrating-oil return

temperature °C : 45
Tolerance °C : 1

Overflow restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder assembly : 1 688 901 022

Opening pressure bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1500
Aneroid pressure hPa : 1000
Setting mm : 4.2
Tolerance mm : 0.1
Shutoff solenoid Volt : 12
KSB/AFB Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1500
Aneroid pressure hPa : 1000
Setting hPa : 6.4
Tolerance hPa : 0.3
Shutoff solenoid Volt : 12
KSB/AFB Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1200
Aneroid pressure hPa : 1000
Del. quantity cm³/1000 strokes : 33.3
Tolerance cm³/1000 strokes : 0.5
Spread cm³/1000 strokes : 2.5
Check tolerance cm³/1000S. : 2.5
Shutoff solenoid Volt : 12
KSB/AFB Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Check tolerance cm³/1000S. : 2.5

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 800
Del. quantity cm³/1000 strokes : 4.5
Tolerance cm³/1000 strokes : 0.5
Shutoff solenoid Volt : 12

KSB/AFB Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2550
Pressure hPa : 1000
Del. quantity cm³/1000 strokes : 24.0
Tolerance cm³/1000 strokes : 2.0
Shutoff solenoid Volt : 12

KSB/AFB Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity cm³/1000 strokes : 44.0
Tolerance cm³/1000 strokes : 8.0
Shutoff solenoid Volt : 12

KSB/AFB Volt : 12

SET GRADUATED STARTING DELIVERY
CONTROL LEVER, IDLE STOP

Rated speed rpm : 100
Del. quantity cm³/1000 strokes : 44.0
Shutoff solenoid Volt : 12

KSB/AFB Volt : 12

LOAD-DEPENDENT START OF DELIVERY
SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1000
Pressure hPa : 1000
Del. quantity cm³/1000 strokes : -9.0
Tolerance cm³/1000 strokes : 1.0
Shutoff solenoid Volt : 12

KSB/AFB Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1000

Aneroid pressure hPa : 1000
Del. quantity cm³/1000 strokes : -0.2
Tolerance cm³/1000 strokes : 0.1
Shutoff solenoid Volt : 12
KSB/AFB Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1000
Aneroid pressure hPa : 1000
Del. quantity cm³/1000 strokes : -0.6
Tolerance cm³/1000 strokes : 0.1
Shutoff solenoid Volt : 12
KSB/AFB Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2250
Aneroid pressure hPa : 1000
Tolerance mm : 0.3
Check tolerance mm : 0.6
Shutoff solenoid Volt : 12
KSB/AFB Volt : 12

Rated speed rpm : 1000
Aneroid pressure hPa : 1000

SV travel mm : 1.7
Tolerance mm : 0.3
Check tolerance mm : 0.6
Shutoff solenoid Volt : 12
KSB/AFB Volt : 12

Rated speed rpm : 400
Aneroid pressure hPa : 1000
SV travel mm : 1.8
Tolerance mm : 1.0

Check tolerance mm	: 1.2	Overflow quantity ccm/10s	: 63.8
Shutoff solenoid Volt	: 12	Tolerance ccm/10s	: 22.2
Rated speed rpm	: 800	Check tolerance ccm/10s	: 22.2
Aneroid pressure hPa	: 1000	Shutoff solenoid Volt	: 12
SV travel mm	: 3.0	KSB/AFB Volt	: 12
Tolerance mm	: 1.0	DELIVERY AND BREAKAWAY CHARACTERISTIC	
Check tolerance mm	: 1.2	Rated speed rpm	: 2550
Shutoff solenoid Volt	: 12	Aneroid pressure hPa	: 1000
SUPPLY PUMP PRESSURE CHARACTERISTIC		Del. quantity cm ³ /1000 strokes	: 24.0
Rated speed rpm	: 2250	Tolerance cm ³ /1000 strokes	: 2.0
Aneroid pressure hPa	: 1000	Check tolerance cm ³ /1000s.	: 4.0
Supply pump pressure bar	: 8.5	Shutoff solenoid Volt	: 12
Tolerance hPa	: 0.3	KSB/AFB Volt	: 12
Shutoff solenoid Volt	: 12	Rated speed rpm	: 2725
KSB/AFB Volt	: 12	Aneroid pressure hPa	: 1000
Rated speed rpm	: 1000	Del. quantity cm ³ /1000 strokes	: 7.0
Aneroid pressure hPa	: 1000	Shutoff solenoid Volt	: 12
Supply pump pressure bar	: 5.0	KSB/AFB Volt	: 12
Tolerance hPa	: 0.3	Rated speed rpm	: 2950
Shutoff solenoid Volt	: 12	Aneroid pressure hPa	: 1000
KSB/AFB Volt	: 12	Del. quantity cm ³ /1000 strokes	: 2.0
OVERFLOW QUANTITY		Tolerance cm ³ /1000 strokes	: 2.0
Rated speed rpm	: 2250	Check tolerance cm ³ /1000s.	: 2.0
Aneroid pressure hPa	: 1000	Shutoff solenoid Volt	: 12
Overflow quantity ccm/10s	: 97.2	KSB/AFB Volt	: 12
Tolerance ccm/10s	: 41.6	Rated speed rpm	: 2250
Check tolerance ccm/10s	: 41.6	Aneroid pressure hPa	: 1000
Shutoff solenoid Volt	: 12	Del. quantity cm ³ /1000 strokes	: 36.5
KSB/AFB Volt	: 12	Tolerance cm ³ /1000 strokes	: 1.3
Rated speed rpm	: 700		
Aneroid pressure hPa	: 22		

Check tolerance		Aneroid pressure	
cm ³ /1000S.	: 2.3	hPa	: 50
Shutoff solenoid		Tolerance	
Volt	: 12	cm ³ /1000 strokes	: 0.5
KSB/AFB Volt	: 12	Check tolerance	
Rated speed rpm	: 500	cm ³ /1000S.	: 0.5
Del. quantity		Check tolerance	
cm ³ /1000 strokes	: 31.0	cm ³ /1000S.	: 0.5
Tolerance		Shutoff solenoid	
cm ³ /1000 strokes	: 2.5	Volt	: 12
Check tolerance		KSB/AFB Volt	: 12
cm ³ /1000S.	: 3.0	Rated speed rpm	: 700
Shutoff solenoid		Aneroid pressure	
Volt	: 12	hPa	: 170
KSB/AFB Volt	: 12	Del. quantity	
Rated speed rpm	: 1800	cm ³ /1000 strokes	: 2.4
Aneroid pressure		Check tolerance	
hPa	: 1000	cm ³ /1000S.	: 1.0
Del. quantity		Shutoff solenoid	
cm ³ /1000 strokes	: 36.2	Volt	: 12
Tolerance		KSB/AFB Volt	: 12
cm ³ /1000 strokes	: 1.5	ELECTR. SHUTOFF	
Check tolerance		CONTROL LEVER, IDLE STOP	
cm ³ /1000S.	: 2.3	Rated speed rpm	: 485
Shutoff solenoid		Del. quantity	
Volt	: 12	cm ³ /1000 strokes	: 1.5
KSB/AFB Volt	: 12	Tolerance	
Rated speed rpm	: 700	cm ³ /1000 strokes	: 1.5
Aneroid pressure		Check tolerance	
hPa	: 1000	cm ³ /1000S.	: 1.5
Del. quantity		Spread	
cm ³ /1000 strokes	: 31.5	cm ³ /1000 strokes	: 5.0
Tolerance		FULL-LOAD STOP CONTROL LEVER	
cm ³ /1000 strokes	: 1.5	Rated speed rpm	: 485
Check tolerance		Del. quantity	
cm ³ /1000S.	: 3.0	cm ³ /1000 strokes	: 1.5
Shutoff solenoid		Tolerance	
Volt	: 12	cm ³ /1000 strokes	: 1.5
KSB/AFB Volt	: 12	Spread	
Rated speed rpm	: 1200	cm ³ /1000 strokes	: 5.0
Aneroid pressure		Check tolerance	
hPa	: 1000	cm ³ /1000S.	: 1.5
Del. quantity		Spread	
cm ³ /1000 strokes	: 33.3	cm ³ /1000 strokes	: 5.0
Tolerance		IDLE DELIVERY	
cm ³ /1000 strokes	: 0.5		
Check tolerance			
cm ³ /1000S.	: 2.3		
Shutoff solenoid			
Volt	: 12		
Rated speed rpm	: 700		

Rated speed rpm : 485
 Del. quantity cm³/1000 strokes : 9.0
 Tolerance cm³/1000 strokes : 2.5
 Shutoff solenoid Volt : 12
 KSB/AFB Volt : 12

CHECKING LOAD-DEPENDENT START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1000
 Aneroid pressure hPa : 1000
 Del. quantity cm³/1000 strokes : -11.0
 Tolerance cm³/1000 strokes : 4.0
 Check tolerance cm³/1000S. : 4.0
 Shutoff solenoid Volt : 12
 KSB/AFB Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1000
 Aneroid pressure hPa : 1000
 Del. quantity cm³/1000 strokes : -0.6
 Tolerance cm³/1000 strokes : 0.1
 Check tolerance cm³/1000S. : 0.1
 Shutoff solenoid Volt : 12
 KSB/AFB Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1000
 Aneroid pressure hPa : 1000
 Del. quantity cm³/1000 strokes : 6.0
 Tolerance cm³/1000 strokes : 1.0
 Check tolerance cm³/1000S. : 1.0
 Shutoff solenoid Volt : 12

KS_B/AFB Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1000
 Aneroid pressure hPa : 1000
 Tolerance mm : 0.3
 Check tolerance mm : 0.4
 Shutoff solenoid Volt : 12
 KSB/AFB Volt : 12

EXHAUST-GAS RECIRCULATION

Rated speed rpm : 1000
 Aneroid pressure hPa : 1000
 Del. quantity cm³/1000 strokes : 16.0
 Tolerance cm³/1000 strokes : 1.0
 Check tolerance cm³/1000S. : 2.5
 Shutoff solenoid Volt : 12

KS_B/AFB Volt : 12

START TRANSITION

Rated speed rpm : 400
 Del. quantity cm³/1000 strokes : 32.0
 Tolerance cm³/1000 strokes : 5.0
 Shutoff solenoid Volt : 12
 KSB/AFB Volt : 12

Rated speed rpm : 250
 Del. quantity cm³/1000 strokes : 50.0
 Tolerance cm³/1000 strokes : 10.0
 Shutoff solenoid Volt : 12

KS_B/AFB Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3

Tolerance mm : +0,1
Dimension KF mm : 5,4
Tolerance mm : +0,2
Dimension MS mm : 0,9
Tolerance mm : +0,2

MICROSWITCH
SET

mm : ARF12,0

CONTROL LEVER POSITION
SET

Control lever
position YA mm : 24,2..26,2

Control lever
position YB mm : 53,0..63,6

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.11.95
Test oil : ISO 4113

Part no. : 0 460 494 372
Pump designation : VE4/9F2250R571-1

Customer-spec. information
Customer : OPEL
Motor : 1,7 DTL
Power KW : 50.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1500
Aneroid pressure hPa : 1000
Setting mm : 4.2
Tolerance mm : 0.1
Shutoff solenoid Volt : 12
KSB/AFB Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1500
Aneroid pressure hPa : 1000
Setting hPa : 6.4
Tolerance hPa : 0.3
Shutoff solenoid Volt : 12
KSB/AFB Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1200
Aneroid pressure hPa : 1000
Del. quantity cm³/1000 strokes : 33.3
Tolerance cm³/1000 strokes : 0.5
Spread cm³/1000 strokes : 2.5
Check tolerance cm³/1000S. : 2.5
Shutoff solenoid Volt : 12
KSB/AFB Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Check tolerance cm³/1000S. : 2.5

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 800
Del. quantity cm³/1000 strokes : 4.5
Tolerance cm³/1000 strokes : 0.5
Shutoff solenoid Volt : 12

+	Aneroid pressure hPa	:	1000
+	Del. quantity cm ³ /1000 strokes	:	-0.2
+	Tolerance cm ³ /1000 strokes	:	0.1
+	Shutoff solenoid Volt	:	12
+	KSB/AFB Volt	:	12
TIMING-DEVICE TRAVEL DIFFERENCE			
+	Rated speed rpm	:	1000
+	Aneroid pressure hPa	:	1000
+	Del. quantity cm ³ /1000 strokes	:	-0.6
+	Tolerance cm ³ /1000 strokes	:	0.1
+	Shutoff solenoid Volt	:	12
+	KSB/AFB Volt	:	12
INJECTION-PUMP TEST SPECIFICATIONS			
TIMING DEVICE CHARACTERISTIC			
+	Rated speed rpm	:	2250
+	Aneroid pressure hPa	:	1000
+	Tolerance mm	:	0.3
+	Check tolerance mm	:	0.6
+	Shutoff solenoid Volt	:	12
+	KSB/AFB Volt	:	12
+	Rated speed rpm	:	1000
+	Aneroid pressure hPa	:	1000
+	SV travel mm	:	1.7
+	Tolerance mm	:	0.3
+	Check tolerance mm	:	0.6
+	Shutoff solenoid Volt	:	12
+	KSB/AFB Volt	:	12
+	Rated speed rpm	:	400
+	Aneroid pressure hPa	:	1000
+	SV travel mm	:	1.8
+	Tolerance mm	:	1.0

Check tolerance mm	: 1.2	Overflow quantity ccm/10s	: 63.8
Shutoff solenoid Volt	: 12	Tolerance ccm/10s	: 22.2
Rated speed rpm	: 800	Check tolerance ccm/10s	: 22.2
Aneroid pressure hPa	: 1000	Shutoff solenoid Volt	: 12
SV travel mm	: 3.0	KSB/AFB Volt	: 12
Tolerance mm	: 1.0	DELIVERY AND BREAKAWAY CHARACTERISTIC	
Check tolerance mm	: 1.2	Rated speed rpm	: 2550
Shutoff solenoid Volt	: 12	Aneroid pressure hPa	: 1000
SUPPLY PUMP PRESSURE CHARACTERISTIC		Del. quantity cm ³ /1000 strokes	: 24.0
Rated speed rpm	: 2250	Tolerance cm ³ /1000 strokes	: 2.0
Aneroid pressure hPa	: 1000	Check tolerance cm ³ /1000S.	: 4.0
Supply pump pressure bar	: 8.5	Shutoff solenoid Volt	: 12
Tolerance hPa	: 0.3	KSB/AFB Volt	: 12
Shutoff solenoid Volt	: 12	Rated speed rpm	: 2725
KSB/AFB Volt	: 12	Aneroid pressure hPa	: 1000
Rated speed rpm	: 1000	Del. quantity cm ³ /1000 strokes	: 7.0
Aneroid pressure hPa	: 1000	Shutoff solenoid Volt	: 12
Supply pump pressure bar	: 5.0	KSB/AFB Volt	: 12
Tolerance hPa	: 0.3	Rated speed rpm	: 2950
Shutoff solenoid Volt	: 12	Aneroid pressure hPa	: 1000
KSB/AFB Volt	: 12	Del. quantity cm ³ /1000 strokes	: 2.0
OVERFLOW QUANTITY		Tolerance cm ³ /1000 strokes	: 2.0
Rated speed rpm	: 2250	Check tolerance cm ³ /1000S.	: 2.0
Aneroid pressure hPa	: 1000	Shutoff solenoid Volt	: 12
Overflow quantity ccm/10s	: 97.2	KSB/AFB Volt	: 12
Tolerance ccm/10s	: 41.6	Rated speed rpm	: 2250
Check tolerance ccm/10s	: 41.6	Aneroid pressure hPa	: 1000
Shutoff solenoid Volt	: 12	Del. quantity cm ³ /1000 strokes	: 36.5
KSB/AFB Volt	: 12	Tolerance cm ³ /1000 strokes	: 1.3
Rated speed rpm	: 700		
Aneroid pressure hPa	: 1000		

Check tolerance		Aneroid pressure
cm3/1000S.	: 2.3	hPa : 50
Shutoff solenoid		Tolerance
Volt	: 12	cm3/1000 strokes : 0.5
KSB/AFB Volt	: 12	Check tolerance
Rated speed rpm	: 500	cm3/1000S. : 0.5
Del. quantity		Check tolerance
cm3/1000 strokes	: 31.0	cm3/1000S. : 0.5
Tolerance		Shutoff solenoid
cm3/1000 strokes	: 2.5	Volt : 12
Check tolerance		KSB/AFB Volt : 12
cm3/1000S.	: 3.0	Rated speed rpm : 700
Shutoff solenoid		Aneroid pressure
Volt	: 12	hPa : 170
KSB/AFB Volt	: 12	Del. quantity
Rated speed rpm	: 1800	cm3/1000 strokes : 2.4
Aneroid pressure		Check tolerance
hPa	: 1000	cm3/1000S. : 1.0
Del. quantity		Shutoff solenoid
cm3/1000 strokes	: 36.2	Volt : 12
Tolerance		KSB/AFB Volt : 12
cm3/1000 strokes	: 1.5	
Check tolerance		ELECTR. SHUTOFF
cm3/1000S.	: 2.3	CONTROL LEVER, IDLE STOP
Shutoff solenoid		
Volt	: 12	Rated speed rpm : 485
KSB/AFB Volt	: 12	Del. quantity
Rated speed rpm	: 700	cm3/1000 strokes : 1.5
Aneroid pressure		Tolerance
hPa	: 1000	cm3/1000 strokes : 1.5
Del. quantity		Check tolerance
cm3/1000 strokes	: 31.5	cm3/1000S. : 1.5
Tolerance		Spread
cm3/1000 strokes	: 1.5	cm3/1000 strokes : 5.0
Check tolerance		
cm3/1000S.	: 3.0	FULL-LOAD STOP CONTROL LEVER
Shutoff solenoid		
Volt	: 12	Rated speed rpm : 485
KSB/AFB Volt	: 12	Del. quantity
Rated speed rpm	: 1200	cm3/1000 strokes : 1.5
Aneroid pressure		Tolerance
hPa	: 1000	cm3/1000 strokes : 1.5
Del. quantity		Spread
cm3/1000 strokes	: 33.3	cm3/1000 strokes : 5.0
Tolerance		Check tolerance
cm3/1000 strokes	: 0.5	cm3/1000S. : 1.5
Check tolerance		Spread
cm3/1000S.	: 2.3	cm3/1000 strokes : 5.0
Shutoff solenoid		
Volt	: 12	
Rated speed rpm	: 700	

Rated speed rpm : 485
 Del. quantity cm³/1000 strokes : 9.0
 Tolerance cm³/1000 strokes : 2.5
 Shutoff solenoid Volt : 12
 KSB/AFB Volt : 12

CHECKING LOAD-DEPENDENT START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1000
 Aneroid pressure hPa : 1000
 Del. quantity cm³/1000 strokes : -11.0
 Tolerance cm³/1000 strokes : 4.0
 Check tolerance cm³/1000S. : 4.0
 Shutoff solenoid Volt : 12
 KSB/AFB Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1000
 Aneroid pressure hPa : 1000
 Del. quantity cm³/1000 strokes : -0.6
 Tolerance cm³/1000 strokes : 0.1
 Check tolerance cm³/1000S. : 0.1
 Shutoff solenoid Volt : 12
 KSB/AFB Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1000
 Aneroid pressure hPa : 1000
 Del. quantity cm³/1000 strokes : 6.0
 Tolerance cm³/1000 strokes : 1.0
 Check tolerance cm³/1000S. : 1.0
 Shutoff solenoid Volt : 12

KS^B/AFB Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1000
 Aneroid pressure hPa : 1000
 Tolerance mm : 0.3
 Check tolerance mm : 0.4
 Shutoff solenoid Volt : 12
 KSB/AFB Volt : 12

EXHAUST-GAS RECIRCULATION

Rated speed rpm : 1000
 Aneroid pressure hPa : 1000
 Del. quantity cm³/1000 strokes : 16.0
 Tolerance cm³/1000 strokes : 1.0
 Check tolerance cm³/1000S. : 2.5
 Shutoff solenoid Volt : 12
 KSB/AFB Volt : 12

KS^B/AFB Volt : 12

START TRANSITION

Rated speed rpm : 400
 Del. quantity cm³/1000 strokes : 32.0
 Tolerance cm³/1000 strokes : 5.0
 Shutoff solenoid Volt : 12
 KSB/AFB Volt : 12

Rated speed rpm : 250
 Del. quantity cm³/1000 strokes : 50.0
 Tolerance cm³/1000 strokes : 10.0
 Shutoff solenoid Volt : 12
 KSB/AFB Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3

Tolerance mm : $\pm 0,1$
Dimension KF mm : 5,4
Tolerance mm : $\pm 0,2$
Dimension MS mm : 0,9
Tolerance mm : $\pm 0,2$

MICROSWITCH
SET

: ARF 12,0

CONTROL LEVER POSITION
SET

Control lever
position YA mm : 24,2..26,2

Control lever
position YB mm : 53,0..61,6

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.01.96
Test oil : ISO 4113

Part no. : 0 460 424 104
Pump designation : VE4/12F1200R572

Customer-spec. information

Customer : MAN
Motor : D 0824 LFL 01
Power KW : 114.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 110

Opening pressure
bar : 250
Tolerance bar : 3

Test Lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 840

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 850
Aneroid pressure hPa : 1200

Setting mm : 2.6
Tolerance mm : 0.2

KSB/AFB Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 850
Aneroid pressure hPa : 1200

Setting hPa : 6.7
Tolerance hPa : 0.3

KSB/AFB Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1000
Aneroid pressure hPa : 1200

Del. quantity cm³/1000 strokes : 108.0

Tolerance cm³/1000 strokes : 0.5

Spread cm³/1000 strokes : 4.0

Check tolerance cm³/1000S. : 4.5

KSB/AFB Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 550
Del. quantity cm³/1000 strokes : 61.0

Tolerance cm³/1000 strokes : 0.5

Check tolerance cm³/1000S. : 4.5

KSB/AFB Volt : 12

IDLE SETTING

Rated speed rpm : 400
Del. quantity cm³/1000 strokes : 15.0

Tolerance cm³/1000 strokes : 2.0

Spread cm³/1000 strokes : 6.0

Check tolerance cm ³ /1000S.	:	6.5	SV travel mm	:	1.4
KSB/AFB Volt	:	12	Tolerance mm	:	0.4
FULL-LOAD SPEED REGULATION					
Rated speed rpm	:	1300	Check tolerance mm	:	0.7
Pressure hPa	:	1200	KSB/AFB Volt	:	12
Del. quantity cm ³ /1000 strokes	:	70.0	Rated speed rpm	:	1200
Tolerance cm ³ /1000 strokes	:	3.0	Aneroid pressure hPa	:	1200
KSB/AFB Volt	:	12	SV travel mm	:	4.8
STARTING FUEL DELIVERY					
Rated speed rpm	:	100	Tolerance mm	:	0.4
Del. quantity cm ³ /1000 strokes	:	130.0	Check tolerance mm	:	0.4
Tolerance cm ³ /1000 strokes	:	30.0	KSB/AFB Volt	:	12
KSB/AFB Volt	:	12	SUPPLY PUMP PRESSURE CHARACTERISTIC		
SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP					
Rated speed rpm	:	100	Rated speed rpm	:	1200
Del. quantity cm ³ /1000 strokes	:	45.0	Aneroid pressure hPa	:	1200
Tolerance cm ³ /1000 strokes	:	1.0	Supply pump pressure bar	:	8.4
KSB/AFB Volt	:	12	Tolerance hPa	:	0.3
INJECTION-PUMP TEST SPECIFICATIONS					
TIMING DEVICE CHARACTERISTIC					
Rated speed rpm	:	950	KSB/AFB Volt	:	12
Aneroid pressure hPa	:	1200	Rated speed rpm	:	550
SV travel mm	:	3.8	Aneroid pressure hPa	:	1200
Tolerance mm	:	0.4	Supply pump pressure bar	:	5.2
Check tolerance mm	:	0.7	Tolerance hPa	:	0.3
KSB/AFB Volt	:	12	KSB/AFB Volt	:	12
Rated speed rpm	:	750	OVERFLOW QUANTITY		
Aneroid pressure hPa	:	1200	Rated speed rpm	:	550
SV travel mm	:	3.8	Overflow quantity ccm/10s	:	63.8
Tolerance mm	:	0.4	Tolerance ccm/10s	:	22.2
Check tolerance mm	:	0.7	Check tolerance ccm/10s	:	22.2
KSB/AFB Volt	:	12	KSB/AFB Volt	:	12
Rated speed rpm	:	750	Rated speed rpm	:	1200
Aneroid pressure hPa	:	1200	Aneroid pressure hPa	:	1200
			Overflow quantity ccm/10s	:	97.2
			Tolerance ccm/10s	:	41.6

Check tolerance ccm/10s	: 41.6	Tolerance cm ³ /1000 strokes	: 0.5
KSB/AFB Volt	: 12	Check tolerance cm ³ /1000S.	: 2.5
DELIVERY AND BREAKAWAY CHARACTERISTIC			
Rated speed rpm	: 1300	Rated speed rpm	: 1200
Aneroid pressure hPa	: 1200	Aneroid pressure hPa	: 1200
Del. quantity cm ³ /1000 strokes	: 70.0	Del. quantity cm ³ /1000 strokes	: 103.5
Tolerance cm ³ /1000 strokes	: 3.0	Tolerance cm ³ /1000 strokes	: 2.5
Check tolerance cm ³ /1000S.	: 8.5	Check tolerance cm ³ /1000S.	: 4.0
KSB/AFB Volt	: 12	KSB/AFB Volt	: 12
Rated speed rpm	: 1400	Rated speed rpm	: 700
Aneroid pressure hPa	: 1200	Aneroid pressure hPa	: 1200
Del. quantity cm ³ /1000 strokes	: 7.5	Del. quantity cm ³ /1000 strokes	: 112.5
Check tolerance cm ³ /1000S.	: 7.5	Tolerance cm ³ /1000 strokes	: 2.5
KSB/AFB Volt	: 12	Check tolerance cm ³ /1000S.	: 4.0
Rated speed rpm	: 1450	KSB/AFB Volt	: 12
Aneroid pressure hPa	: 1200	Rated speed rpm	: 850
Del. quantity cm ³ /1000 strokes	: 1.5	Aneroid pressure hPa	: 1200
Tolerance cm ³ /1000 strokes	: 1.5	Del. quantity cm ³ /1000 strokes	: 114.0
Check tolerance cm ³ /1000S.	: 1.5	Tolerance cm ³ /1000 strokes	: 2.5
KSB/AFB Volt	: 12	Check tolerance cm ³ /1000S.	: 4.0
Rated speed rpm	: 1350	KSB/AFB Volt	: 12
Aneroid pressure hPa	: 1200	Rated speed rpm	: 550
Del. quantity cm ³ /1000 strokes	: 35.0	Aneroid pressure hPa	: 1200
Tolerance cm ³ /1000 strokes	: 20.0	Del. quantity cm ³ /1000 strokes	: 114.0
Check tolerance cm ³ /1000S.	: 20.0	Tolerance cm ³ /1000 strokes	: 4.5
KSB/AFB Volt	: 12	Check tolerance cm ³ /1000S.	: 6.0
Rated speed rpm	: 550	KSB/AFB Volt	: 12
Aneroid pressure hPa	: 400	Rated speed rpm	: 1000
Del. quantity cm ³ /1000 strokes	: 84.0	Aneroid pressure hPa	: 1200
		Del. quantity cm ³ /1000 strokes	: 108.0

Tolerance
cm³/1000 strokes : 0.5
Check tolerance
cm³/1000S. : 2.5

MECHANICAL SHUTOFF

Rated speed rpm : 1200
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5
KSB/AFB Volt : 12

IDLE DELIVERY

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5
KSB/AFB Volt : 12

START TRANSITION

Rated speed rpm : 370
Del. quantity
cm³/1000 strokes : 70.0
Tolerance
cm³/1000 strokes : 20.0
KSB/AFB Volt : 12

Rated speed rpm : 270
Del. quantity
cm³/1000 strokes : 95.0
Tolerance
cm³/1000 strokes : 15.0
KSB/AFB Volt : 12

Dimension K mm : 3,7
Tolerance mm : +0,1
Dimension KF mm : 6,4
Tolerance mm : +0,2
MS1 dimension mm : 1,5
Tolerance mm : +0,15/-0,1
KSB travel mm : 7,1

MICROSWITCH
SET

mm : GST 71,9
CONTROL LEVER POSITION
SET

Control lever
position YA mm : 37,4..40,4

Control lever
position YB mm : 36,9..42,1

End of test--specification sheet

ASSEMBLY AND ADJUSTMENT DIMENSIONS

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 17.10.95
Test oil : ISO 4113

Part no. : 0 460 414 109
Pump designation : VE4/11F2000R573

Customer-spec. information

Customer : IVECO-SOFIM
Motor : 8140.07.3700

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.75

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle hold
assembly : 1 688 901 027

Opening pressure
bar : 250
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS**INJECTION PUMP SETTING VALUES****TIMING DEVICE TRAVEL**

Rated speed rpm : 1600
Setting mm : 2.9
Tolerance mm : 0.1
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1100
Setting hPa : 6.3
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1100
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 48.0
Del. quantity
cm³/1000 strokes : 33.0
Tolerance
cm³/1000 strokes : 0.5
Tolerance
cm³/1000 strokes : 0.5
Spread
cm³/1000 strokes : 3.5
Shutoff solenoid
Volt : 12
Shutoff solenoid
Volt : 12
Check tolerance
cm³/1000S. : 4.5

IDLE SETTING

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 12.5
Tolerance
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12
Spread
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.5

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2200
Del. quantity
cm³/1000 strokes : 30.0
Tolerance
cm³/1000 strokes : 2.0

Shutoff solenoid			
Volt	:	12	
STARTING FUEL DELIVERY			
Rated speed rpm	:	100	
Del. quantity			
cm ³ /1000 strokes	:	75.0	
Tolerance			
cm ³ /1000 strokes	:	20.0	
Shutoff solenoid			
Volt	:	12	
<hr/>			
INJECTION-PUMP TEST SPECIFICATIONS			
TIMING DEVICE CHARACTERISTIC			
Rated speed rpm	:	1800	
SV travel mm	:	3.9	
Tolerance mm	:	0.3	
Check			
tolerance mm	:	0.7	
Shutoff solenoid			
Volt	:	12	
Rated speed rpm	:	1200	
SV travel mm	:	0.7	
Tolerance mm	:	0.3	
Check			
tolerance mm	:	0.7	
Shutoff solenoid			
Volt	:	12	
Rated speed rpm	:	550	
SV travel mm	:	2.5	
Tolerance mm	:	1.2	
Check			
tolerance mm	:	1.5	
Shutoff solenoid			
Volt	:	12	
KS _B /AF _B Volt	:	12	
Rated speed rpm	:	2000	
SV travel mm	:	4.5	
Tolerance mm	:	0.3	
Check			
tolerance mm	:	0.7	
Shutoff solenoid			
Volt	:	12	
SUPPLY PUMP PRESSURE CHARACTERISTIC			
Rated speed rpm	:	2000	
Supply pump			
pressure bar	:	8.7	
Tolerance hPa	:	0.3	
Shutoff solenoid			
Volt	:	12	
Rated speed rpm	:	500	
Supply pump			
pressure bar	:	4.3	
Tolerance hPa	:	0.3	
Shutoff solenoid			
Volt	:	12	
Rated speed rpm	:	550	
Supply pump			
pressure bar	:	7.7	
Tolerance hPa	:	0.5	
Shutoff solenoid			
Volt	:	12	
KS _B /AF _B Volt	:	12	
OVERFLOW QUANTITY			
Rated speed rpm	:	500	
Overflow quantity			
ccm/10s	:	111.1	
Tolerance			
ccm/10s	:	22.2	
Check tolerance			
ccm/10s	:	22.2	
Shutoff solenoid			
Volt	:	12	
Rated speed rpm	:	2000	
Overflow quantity			
ccm/10s	:	138.8	
Tolerance			
ccm/10s	:	55.5	
Check tolerance			
ccm/10s	:	55.5	
Shutoff solenoid			
Volt	:	12	
DELIVERY AND BREAKAWAY CHARACTERISTIC			
Rated speed rpm	:	2200	
Del. quantity			
cm ³ /1000 strokes	:	30.0	
Tolerance			
cm ³ /1000 strokes	:	2.0	
Check tolerance			
cm ³ /1000S.	:	4.5	
Shutoff solenoid			
Volt	:	12	

Rated speed rpm	:	2150	Rated speed rpm	:	350
Del. quantity			Del. quantity		
cm3/1000 strokes	:	41.0	cm3/1000 strokes	:	1.5
Tolerance			Tolerance		
cm3/1000 strokes	:	4.0	cm3/1000 strokes	:	1.5
Check tolerance			Check tolerance		
cm3/1000S.	:	6.0	cm3/1000S.	:	1.5
Shutoff solenoid					
Volt	:	12			
Rated speed rpm	:	2350	FULL-LOAD STOP CONTROL LEVER		
Del. quantity			Rated speed rpm	:	350
cm3/1000 strokes	:	1.5	Del. quantity		
Tolerance			cm3/1000 strokes	:	1.5
cm3/1000 strokes	:	1.5	Tolerance		
Check tolerance			cm3/1000 strokes	:	1.5
cm3/1000S.	:	1.5	Check tolerance		
Shutoff solenoid			cm3/1000S.	:	1.5
Volt	:	12			
Aneroid pressure			IDLE DELIVERY		
hPa	:		Rated speed rpm	:	450
LDA/			Del. quantity		
HBA stroke mm	:	9.0	cm3/1000 strokes	:	1.5
Rated speed rpm	:	2000	Tolerance		
Del. quantity			cm3/1000 strokes	:	1.5
cm3/1000 strokes	:	47.0	Check tolerance		
Tolerance			cm3/1000S.	:	1.5
cm3/1000 strokes	:	2.5	Shutoff solenoid		
Check tolerance			Volt	:	12
cm3/1000S.	:	3.5	Rated speed rpm	:	325
Shutoff solenoid			Del. quantity		
Volt	:	12	cm3/1000 strokes	:	24.0
Rated speed rpm	:	1500	Tolerance		
Del. quantity			cm3/1000 strokes	:	5.0
cm3/1000 strokes	:	51.5	Check tolerance		
Tolerance			cm3/1000S.	:	6.0
cm3/1000 strokes	:	2.5	Shutoff solenoid		
Check tolerance			Volt	:	12
cm3/1000S.	:	3.5			
Shutoff solenoid					
Volt	:	12			
Rated speed rpm	:	500	START TRANSITION		
Del. quantity			Rated speed rpm	:	450
cm3/1000 strokes	:	33.0	Del. quantity		
Tolerance			cm3/1000 strokes	:	25.0
cm3/1000 strokes	:	0.5	Tolerance		
Check tolerance			cm3/1000 strokes	:	15.0
cm3/1000S.	:	3.5	Shutoff solenoid		
Shutoff solenoid			Volt	:	12
Volt	:	12			
<hr/>					
ELECTR. SHUTOFF			Rated speed rpm	:	300
CONTROL LEVER, IDLE STOP			Del. quantity		
			cm3/1000 strokes	:	75.0

Tolerance
cm³/1000 strokes : 20.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/
HBA stroke mm : 9.0
Dimension K mm : 3,5
Tolerance mm : ±0,1
Dimension KF mm : 8,4
Tolerance mm : ±0,2
Dimension MS mm : 1,5
Tolerance mm : ±0,2

CONTROL LEVER POSITION
SET

Control lever
position YA mm : 36,8..40,9

Control lever
position YB mm : 44,4..49,6

End of test-specification sheet

BOSCH TNJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 31.01.96
Test oil : ISO 4113

Part no. : 0 460 426 233
Pump designation : VE6/12F1100R579

Customer-spec. information

Customer : FNH-GEOTECH
Motor : 7.5 L NA/DI

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.75

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 110

Opening pressure
bar : 250
Tolerance bar : 3

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 840

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 1,0
Tolerance mm : +0,2
Outlet : B

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 600
Setting mm : 1.6
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 600
Set... hPa : 5.5
Tolerance hPa : 0.2
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 600
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 66.5
Del. quantity
cm³/1000 strokes : 69.5
Tolerance
cm³/1000 strokes : 0.5
Tolerance
cm³/1000 strokes : 0.5
Spread
cm³/1000 strokes : 5.0
Spread
cm³/1000 strokes : 5.0
Shutoff solenoid
Volt : 12
Shutoff solenoid
Volt : 12
Check tolerance
cm³/1000s. : 5.0

IDLE SETTING

Rated speed rpm : 375
Del. quantity
cm³/1000 strokes : 15.0
Tolerance
cm³/1000 strokes : 0.5
Shutoff solenoid
Volt : 12
Spread
cm³/1000 strokes : 5.0

Check tolerance cm ³ /1000S.	:	5.0	+	Rated speed rpm	:	1100
FULL-LOAD SPEED REGULATION			+	Supply pump pressure bar	:	7.8
Rated speed rpm	:	1180	+	Tolerance hPa	:	0.3
Del. quantity cm ³ /1000 strokes	:	33.0	+	Shutoff solenoid Volt	:	12
Tolerance cm ³ /1000 strokes	:	3.0	+	Rated speed rpm	:	475
Shutoff solenoid Volt	:	12	+	Supply pump pressure bar	:	4.9
STARTING FUEL DELIVERY			+	Tolerance hPa	:	0.3
Rated speed rpm	:	100	+	Shutoff solenoid Volt	:	12
Del. quantity cm ³ /1000 strokes	:	85.0	+	OVERFLOW QUANTITY		
Tolerance cm ³ /1000 strokes	:	25.0	+	Rated speed rpm	:	1100
Shutoff solenoid Volt	:	12	+	Overflow quantity ccm/10s	:	138.8
INJECTION-PUMP TEST SPECIFICATIONS			+	Tolerance ccm/10s	:	41.6
TIMING DEVICE CHARACTERISTIC			+	Check tolerance ccm/10s	:	41.6
Rated speed rpm	:	750	+	Shutoff solenoid Volt	:	12
SV travel mm	:	2.3	+	Rated speed rpm	:	475
Tolerance mm	:	0.4	+	Overflow quantity ccm/10s	:	97.2
Check tolerance mm	:	0.7	+	Tolerance ccm/10s	:	22.2
Shutoff solenoid Volt	:	12	+	Check tolerance ccm/10s	:	22.2
Rated speed rpm	:	500	+	Shutoff solenoid Volt	:	12
SV travel mm	:	1.2	+	DELIVERY AND BREAKAWAY CHARACTERISTIC		
Tolerance mm	:	0.4	+	Rated speed rpm	:	1180
Check tolerance mm	:	0.7	+	Del. quantity cm ³ /1000 strokes	:	33.0
Shutoff solenoid Volt	:	12	+	Tolerance cm ³ /1000 strokes	:	3.0
Rated speed rpm	:	1100	+	Check tolerance cm ³ /1000S.	:	8.0
SV travel mm	:	2.5	+	Shutoff solenoid Volt	:	12
Tolerance mm	:	0.4	+	Rated speed rpm	:	1150
Check tolerance mm	:	0.7	+	Del. quantity cm ³ /1000 strokes	:	50.5
Shutoff solenoid Volt	:	12	+	Tolerance cm ³ /1000 strokes	:	5.0
SUPPLY PUMP PRESSURE CHARACTERISTIC			+	Check tolerance cm ³ /1000S.	:	5.0
			+	Shutoff solenoid Volt	:	12

Rated speed rpm : 1260
 Del. quantity cm3/1000 strokes : 1.5
 Tolerance cm3/1000 strokes : 1.5
 Check tolerance cm3/1000S. : 1.5
 Shutoff solenoid Volt : 12
 Aneroid pressure hPa :
 LDA/
 HBA stroke mm : 5.0
 Rated speed rpm : 1100
 Del. quantity cm3/1000 strokes : 66.0
 Tolerance cm3/1000 strokes : 2.0
 Check tolerance cm3/1000S. : 3.5
 Shutoff solenoid Volt : 12
 Rated speed rpm : 500
 Del. quantity cm3/1000 strokes : 56.0
 Tolerance cm3/1000 strokes : 6.0
 Check tolerance cm3/1000S. : 6.0
 Shutoff solenoid Volt : 12
 Rated speed rpm : 475
 Del. quantity cm3/1000 strokes : 53.5
 Tolerance cm3/1000 strokes : 3.0
 Check tolerance cm3/1000S. : 5.0
 Shutoff solenoid Volt : 12
 Rated speed rpm : 800
 Del. quantity cm3/1000 strokes : 69.5
 Tolerance cm3/1000 strokes : 0.5
 Check tolerance cm3/1000S. : 3.0
 Shutoff solenoid Volt : 12

ELECTR. SHUTOFF
CONTROL LEVER, IDLE STOP

Rated speed rpm : 375
 Del. quantity cm3/1000 strokes : 1.5
 Tolerance cm3/1000 strokes : 1.5
 Check tolerance cm3/1000S. : 1.5

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 375
 Del. quantity cm3/1000 strokes : 1.5
 Tolerance cm3/1000 strokes : 1.5

IDLE DELIVERY

Rated speed rpm : 460
 Del. quantity cm3/1000 strokes : 1.5
 Tolerance cm3/1000 strokes : 1.5
 Check tolerance cm3/1000S. : 1.5
 Shutoff solenoid Volt : 12

START TRANSITION

Rated speed rpm : 440
 Del. quantity cm3/1000 strokes : 60.0
 Tolerance cm3/1000 strokes : 15.0
 Shutoff solenoid Volt : 12

Rated speed rpm : 250
 Del. quantity cm3/1000 strokes : 115.0
 Tolerance cm3/1000 strokes : 25.0
 Shutoff solenoid Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/
HBA stroke mm : 5,0
Dimension K mm : 3,7
Tolerance mm : $\pm 0,1$
Dimension KF mm : 6,4
Tolerance mm : $\pm 0,2$
Dimension MS mm : 1,3
Tolerance mm : $\pm 0,2$

CONTROL LEVER POSITION
SET

Control lever
position YA mm : 32,8..34,8

Control lever
position YB mm : 39,6..46,2

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 31.01.96
Test oil : ISO 4113

Part no. : 0 460 426 238
Pump designation : VE6/12F1100R579-1

Customer-spec. information
Customer : FNH-GEOTECH
Motor : 7.5 L TC

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.75

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 110

Opening pressure
bar : 250
Tolerance bar : 3

Test Lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 840

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 1,0
Tolerance mm : ±0,2
Outlet : B

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 800
Setting mm : 1.2
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 800
Setting hPa : 6.2
Tolerance hPa : 0.2
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 600
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 61.5
Del. quantity
cm³/1000 strokes : 62.0
Tolerance
cm³/1000 strokes : 0.5
Tolerance
cm³/1000 strokes : 0.5
Spread
cm³/1000 strokes : 5.0
Spread
cm³/1000 strokes : 5.0
Shutoff solenoid
Volt : 12
Shutoff solenoid
Volt : 12
Check tolerance
cm³/1000s. : 5.0

IDLE SETTING

Rated speed rpm : 375
Del. quantity
cm³/1000 strokes : 15.0
Tolerance
cm³/1000 strokes : 0.5
Shutoff solenoid
Volt : 12
Spread
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000s. : 5.0

FULL-LOAD SPEED REGULATION

Rated speed rpm : 1180
Del. quantity
cm³/1000 strokes : 33.0
Tolerance
cm³/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 95.0
Tolerance
cm³/1000 strokes : 25.0
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 900
SV travel mm : 1.8
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 600

SV travel mm : 0.4
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 1100

SV travel mm : 2.4
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 1100
Supply pump
pressure bar : 7.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 475
Supply pump
pressure bar : 4.9
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 1100
Overflow quantity
ccm/10s : 138.8
Tolerance
ccm/10s : 41.6

Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 475
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 22.2

Check tolerance
ccm/10s : 22.2
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 1180
Del. quantity
cm³/1000 strokes : 33.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000s. : 8.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 1150
Del. quantity
cm³/1000 strokes : 50.5
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000s. : 5.0
Shutoff solenoid
Volt : 12

Rated speed rpm	:	1260
Del. quantity		
cm3/1000 strokes	:	1.5
Tolerance		
cm3/1000 strokes	:	1.5
Check tolerance		
cm3/1000S.	:	1.5
Shutoff solenoid		
Volt	:	12
Rated speed rpm	:	1100
Del. quantity		
cm3/1000 strokes	:	59.5
Tolerance		
cm3/1000 strokes	:	2.0
Check tolerance		
cm3/1000S.	:	3.5
Shutoff solenoid		
Volt	:	12
Rated speed rpm	:	500
Del. quantity		
cm3/1000 strokes	:	53.0
Tolerance		
cm3/1000 strokes	:	6.0
Check tolerance		
cm3/1000S.	:	6.0
Shutoff solenoid		
Volt	:	12
Rated speed rpm	:	800
Del. quantity		
cm3/1000 strokes	:	67.5
Tolerance		
cm3/1000 strokes	:	2.0
Check tolerance		
cm3/1000S.	:	3.5
Shutoff solenoid		
Volt	:	12
Rated speed rpm	:	475
Del. quantity		
cm3/1000 strokes	:	53.5
Tolerance		
cm3/1000 strokes	:	3.0
Check tolerance		
cm3/1000S.	:	4.5
Shutoff solenoid		
Volt	:	12
Rated speed rpm	:	1050
Del. quantity		
cm3/1000 strokes	:	62.0
Tolerance		
cm3/1000 strokes	:	0.5
Check tolerance		
cm3/1000S.	:	3.0
Shutoff solenoid		
Volt	:	12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm	:	375
Del. quantity		
cm3/1000 strokes	:	1.5
Tolerance		
cm3/1000 strokes	:	1.5
Check tolerance		
cm3/1000S.	:	1.5

IDLE DELIVERY

Rated speed rpm	:	450
Del. quantity		
cm3/1000 strokes	:	1.5
Tolerance		
cm3/1000 strokes	:	1.5
Check tolerance		
cm3/1000S.	:	1.5
Shutoff solenoid		
Volt	:	12

START TRANSITION

Rated speed rpm	:	350
Del. quantity		
cm3/1000 strokes	:	80.0
Tolerance		
cm3/1000 strokes	:	15.0
Shutoff solenoid		
Volt	:	12

Rated speed rpm	:	200
Del. quantity		
cm3/1000 strokes	:	120.0
Tolerance		
cm3/1000 strokes	:	25.0
Shutoff solenoid		
Volt	:	12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm	:	3,7
Tolerance mm	:	+0,1
Dimension KF mm	:	6,4
Tolerance mm	:	+0,2
Dimension MS mm	:	1,4
Tolerance mm	:	+0,2

CONTROL LEVER POSITION
SET

Control lever
position YA mm : 32,8..34,8

Control lever
position YB mm : 39,7..46,3

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.04.95
Test oil : ISO 4113

Part no. : 0 460 416 078
Pump designation : VE6/11F1150R586

Customer-spec. information

Customer : IVECO-FIAT
Motor : 8065.05.240
Power KW : 83.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return
temperature °C : 55
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 027

Opening pressure
bar : 250
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 800
Setting mm : 2.4
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 800
Setting hPa : 6.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 64.0
Tolerance
cm³/1000 strokes : 0.5
Spread
cm³/1000 strokes : 3.5
Shutoff solenoid
Volt : 12

IDLE SETTING

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12
Spread
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 4.0

FULL-LOAD SPEED REGULATION

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 25.0
Tolerance
cm³/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 100.0

Tolerance
 cm³/1000 strokes : 30.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 500
 Overflow quantity
 ccm/10s : 63.8
 Tolerance
 ccm/10s : 22.2

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 700
 SV travel mm : 1.4
 Tolerance mm : 0.4
 Check
 tolerance mm : 0.9
 Shutoff solenoid
 Volt : 12

Check tolerance
 ccm/10s : 22.2
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1150
 SV travel mm : 3.3
 Tolerance mm : 0.4
 Check
 tolerance mm : 0.7
 Shutoff solenoid
 Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 1250
 Del. quantity
 cm³/1000 strokes : 25.0
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 6.0
 Shutoff solenoid
 Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 1150
 Supply pump
 pressure bar : 8.0
 Tolerance hPa : 0.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1350
 Del. quantity
 cm³/1000 strokes : 1.5
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000S. : 1.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 500
 Supply pump
 pressure bar : 5.0
 Tolerance hPa : 0.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1150
 Del. quantity
 cm³/1000 strokes : 58.0
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000S. : 3.5
 Shutoff solenoid
 Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 1150
 Overflow quantity
 ccm/10s : 97.2
 Tolerance
 ccm/10s : 41.6
 Check tolerance
 ccm/10s : 41.6
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 500
 Del. quantity
 cm³/1000 strokes : 62.5
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000S. : 3.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 700

Del. quantity
cm³/1000 strokes : 64.0
Tolerance
cm³/1000 strokes : 0.5
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

ELECTR. SHUTOFF
CONTROL LEVER, IDLE STOP

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5
Spread
cm³/1000 strokes : 5.0

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Spread
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 1.5
Spread
cm³/1000 strokes : 5.0

IDLE DELIVERY

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 250
Del. quantity
cm³/1000 strokes : 60.0

Tolerance
cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 150
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : 30.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : +0,1
Dimension KF mm : 5,4
Tolerance mm : +0,2
Dimension MS mm : 1,2
Tolerance mm : +0,2

CONTROL LEVER POSITION
SET

Control lever
position YA mm : 36,5..38,5
Control lever
position YB mm : 43,7..48,9

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.12.95
Test oil : ISO 4113

Part no. : 0 460 484 073
Pump designation : VE4/8F2050R588

Customer-spec. information

Customer : RENAULT
Motor : F8Q - 640
Power KW : 40.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test Lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS**INJECTION PUMP SETTING VALUES****TIMING DEVICE TRAVEL**

Rated speed rpm : 1500
Setting mm : 3.2
Tolerance .. : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1500
Setting hPa : 6.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : 33.5
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 2.5
Shutoff solenoid
Volt : 12

**HOUSING-FIXED IDLE SPRING
RESIDUAL QUANTITY SETTING**

Rated speed rpm : 550
Del. quantity
cm3/1000 strokes : 3.0
Tolerance
cm3/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2150
Del. quantity
cm3/1000 strokes : 27.5
Tolerance
cm3/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 55.0
Tolerance
cm3/1000 strokes : 15.0

Shutoff solenoid		Tolerance	
Volt	: 12	ccm/10s	: 41.6
<hr/>			
INJECTION-PUMP TEST SPECIFICATIONS			
TIMING DEVICE CHARACTERISTIC			
Rated speed rpm	: 2000	Rated speed rpm	: 500
SV travel mm	: 5.4	Overflow quantity	: 63.8
Tolerance mm	: 0.4	ccm/10s	: 22.2
Check tolerance mm	: 0.7	Tolerance	: 22.2
Shutoff solenoid		ccm/10s	: 12
Volt	: 12	Check tolerance	: 22.2
Rated speed rpm	: 1000	Shutoff solenoid	
SV travel mm	: 1.0	Volt	: 12
Tolerance mm	: 0.4	<hr/>	
Check tolerance mm	: 0.7	DELIVERY AND BREAKAWAY CHARACTERISTIC	
Shutoff solenoid		Rated speed rpm	: 2150
Volt	: 12	Del. quantity	: 27.5
Rated speed rpm	: 1250	cm3/1000 strokes	: 3.0
SV travel mm	: 2.1	Tolerance	: 4.0
Tolerance mm	: 0.4	cm3/1000 strokes	: 12
Check tolerance mm	: 0.7	Check tolerance	: 2250
Shutoff solenoid		cm3/1000S.	: 16.0
Volt	: 12	Shutoff solenoid	
Supply pump		Volt	: 5.0
pressure bar	: 8.0	Rated speed rpm	: 2550
Tolerance hPa	: 0.3	Del. quantity	: 2.5
Shutoff solenoid		cm3/1000 strokes	: 2.5
Volt	: 12	Tolerance	: 2.5
Supply pump		cm3/1000 strokes	: 2.5
pressure bar	: 3.3	Check tolerance	: 2.5
Tolerance hPa	: 0.3	cm3/1000S.	: 12
Shutoff solenoid		Shutoff solenoid	
Volt	: 12	Volt	: 2000
OVERFLOW QUANTITY			
Rated speed rpm	: 2000	Del. quantity	: 31.0
Overflow quantity		cm3/1000 strokes	: 1.0
ccm/10s	: 97.2	Tolerance	: 2.3
		cm3/1000 strokes	: 12
		Check tolerance	: 2.3
		cm3/1000S.	: 750
		Shutoff solenoid	
		Volt	: 12

Del. quantity
cm3/1000 strokes : 34.0
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 2.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 1625
Del. quantity
cm3/1000 strokes : 31.9
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 2.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 33.0
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 2.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : 33.5
Tolerance
cm3/1000 strokes : 0.5
Check tolerance
cm3/1000S. : 2.3
Shutoff solenoid
Volt : 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 410
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5
Spread
cm3/1000 strokes : 5.0

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 410
Del. quantity
cm3/1000 strokes : 1.5

Tolerance
cm3/1000 strokes : 1.5
Spread
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 1.5
Shutoff solenoid
cm3/1000 strokes : 5.0

START TRANSITION

Rated speed rpm : 310
Del. quantity
cm3/1000 strokes : 30.0
Tolerance
cm3/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 210
Del. quantity
cm3/1000 strokes : 60.0
Tolerance
cm3/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : ±0,1
Dimension KF mm : 5,4
Tolerance mm : ±0,2
Dimension MS mm : 1,3
Tolerance mm : ±0,2

CONTROL LEVER POSITION SET

Control lever
position YA mm : -
Control lever
position YB mm : -

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.12.95
Test oil : ISO 4113

Part no. : 0 460 484 086
Pump designation : VE4/8F2050R588-1

Customer-spec. information

Customer : RENAULT
Motor : F8Q - 640
Power KW : 47.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test Lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1500
Setting mm : 3.2
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1500
Setting hPa : 6.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 33.5
Tolerance
cm³/1000 strokes : 0.5
Spread
cm³/1000 strokes : 2.5
Shutoff solenoid
Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 3.0
Tolerance
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2150
Del. quantity
cm³/1000 strokes : 27.5
Tolerance
cm³/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 55.0
Tolerance
cm³/1000 strokes : 15.0

Shutoff solenoid		Tolerance	
Volt	: 12	ccm/10s	: 41.6
		Check tolerance	
		ccm/10s	: 41.6
		Shutoff solenoid	
		Volt	: 12
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INJECTION-PUMP TEST SPECIFICATIONS			
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TIMING DEVICE CHARACTERISTIC			
Rated speed rpm	: 2000	Rated speed rpm	: 500
SV travel mm	: 5.4	Overflow quantity	
Tolerance mm	: 0.4	ccm/10s	: 63.8
Check		Tolerance	
tolerance mm	: 0.7	ccm/10s	: 22.2
Shutoff solenoid		Check tolerance	
Volt	: 12	ccm/10s	: 22.2
Shutoff solenoid		Shutoff solenoid	
Volt	: 12	Volt	: 12
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Rated speed rpm	: 1000	DELIVERY AND BREAKAWAY CHARACTERISTIC	
SV travel mm	: 1.0	Rated speed rpm	: 2150
Tolerance mm	: 0.4	Del. quantity	
Check		cm ³ /1000 strokes	: 27.5
tolerance mm	: 0.7	Tolerance	
Shutoff solenoid		cm ³ /1000 strokes	: 3.0
Volt	: 12	Check tolerance	
Shutoff solenoid		cm ³ /1000S.	: 4.0
Volt	: 12	Shutoff solenoid	
Rated speed rpm	: 1250	Volt	: 12
SV travel mm	: 2.1	Rated speed rpm	: 2250
Tolerance mm	: 0.4	Del. quantity	
Check		cm ³ /1000 strokes	: 16.0
tolerance mm	: 0.7	Check tolerance	
Shutoff solenoid		cm ³ /1000S.	: 5.0
Volt	: 12	Shutoff solenoid	
Shutoff solenoid		Volt	: 12
Volt	: 12	Shutoff solenoid	
<hr/>			
SUPPLY PUMP PRESSURE CHARACTERISTIC			
Rated speed rpm	: 2000	Rated speed rpm	: 2550
Supply pump		Del. quantity	
pressure bar	: 8.0	cm ³ /1000 strokes	: 2.5
Tolerance hPa	: 0.3	Tolerance	
Shutoff solenoid		cm ³ /1000 strokes	: 2.5
Volt	: 12	Check tolerance	
Shutoff solenoid		cm ³ /1000S.	: 2.5
Volt	: 12	Shutoff solenoid	
Rated speed rpm	: 500	Volt	: 12
Supply pump		Rated speed rpm	: 2000
pressure bar	: 3.3	Del. quantity	
Tolerance hPa	: 0.3	cm ³ /1000 strokes	: 31.0
Shutoff solenoid		Tolerance	
Volt	: 12	cm ³ /1000 strokes	: 1.0
Shutoff solenoid		Check tolerance	
Volt	: 12	cm ³ /1000S.	: 2.3
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OVERFLOW QUANTITY			
Rated speed rpm	: 2000	Shutoff solenoid	
Overflow quantity		Volt	: 12
ccm/10s	: 97.2	Shutoff solenoid	
		Volt	: 12
		Shutoff solenoid	
		Volt	: 750

Del. quantity		Tolerance
cm3/1000 strokes	: 34.0	cm3/1000 strokes : 1.5
Tolerance		Spread
cm3/1000 strokes	: 1.5	cm3/1000 strokes : 5.0
Check tolerance		Check tolerance
cm3/1000S.	: 2.3	cm3/1000S. : 1.5
Shutoff solenoid		Spread
Volt	: 12	cm3/1000 strokes : 5.0
Rated speed rpm	: 1625	
Del. quantity		
cm3/1000 strokes	: 31.9	
Tolerance		
cm3/1000 strokes	: 1.5	
Check tolerance		START TRANSITION
cm3/1000S.	: 2.3	
Shutoff solenoid		
Volt	: 12	
Rated speed rpm	: 500	Rated speed rpm : 310
Del. quantity		Del. quantity
cm3/1000 strokes	: 33.0	cm3/1000 strokes : 30.0
Tolerance		Tolerance
cm3/1000 strokes	: 1.5	cm3/1000 strokes : 15.0
Check tolerance		Shutoff solenoid
cm3/1000S.	: 2.3	Volt : 12
Shutoff solenoid		
Volt	: 12	
Rated speed rpm	: 1250	Rated speed rpm : 210
Del. quantity		Del. quantity
cm3/1000 strokes	: 33.5	cm3/1000 strokes : 60.0
Tolerance		Tolerance
cm3/1000 strokes	: 0.5	cm3/1000 strokes : 15.0
Check tolerance		Shutoff solenoid
cm3/1000S.	: 2.3	Volt : 12
Shutoff solenoid		
Volt	: 12	

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm	: 410
Del. quantity	
cm3/1000 strokes	: 1.5
Tolerance	
cm3/1000 strokes	: 1.5
Check tolerance	
cm3/1000S.	: 1.5
Spread	
cm3/1000 strokes	: 5.0

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm	: 410
Del. quantity	
cm3/1000 strokes	: 1.5

Tolerance	
cm3/1000 strokes	: 1.5
Spread	
cm3/1000 strokes	: 5.0
Check tolerance	
cm3/1000S.	: 1.5
Spread	
cm3/1000 strokes	: 5.0

START TRANSITION	
Rated speed rpm	: 310
Del. quantity	
cm3/1000 strokes	: 30.0
Tolerance	
cm3/1000 strokes	: 15.0
Shutoff solenoid	
Volt	: 12
Rated speed rpm	: 210
Del. quantity	
cm3/1000 strokes	: 60.0
Tolerance	
cm3/1000 strokes	: 15.0
Shutoff solenoid	
Volt	: 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS	
Dimension K mm	: 3,3
Tolerance mm	: +0,1
Dimension KF mm	: 5,4
Tolerance mm	: +0,2
Dimension MS mm	: 1,3
Tolerance mm	: +0,2

CONTROL LEVER POSITION	
SET	
Control lever	
position YA mm	: 16,0..20,0
Control lever	
position YB mm	: 65,9..77,7

End of test--specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.01.96
Test oil : ISO 4113

Part no. : 0 460 404 081
Pump designation : VE4/10F2100R589

Customer-spec. information

Customer : IVECO-SOFIM
Motor : 8140.67.2550
Power KW : 56.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return
temperature °C : 45

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Prestroke

(as of UT) mm : 0,2
Tolerance mm : 0,02
Check
tolerance mm : 0,04

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1200

Setting mm : 2.1
Tolerance mm : 0.1
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1200

Setting hPa : 6.1
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1200
Del. quantity
cm³/1000 strokes : 42.0
Tolerance
cm³/1000 strokes : 0.5
Spread
cm³/1000 strokes : 2.5
Shutoff solenoid
Volt : 12

IDLE SETTING

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12
Spread
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 2.5

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2400
Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : 2.0

Shutoff solenoid		Rated speed rpm	: 2100
Volt	: 12	SV travel mm	: 7.4
STARTING FUEL DELIVERY			
Rated speed rpm	: 100	Tolerance mm	: 0.4
Del. quantity		Check	
cm ³ /1000 strokes	: 90.0	tolerance mm	: 0.7
Tolerance		Shutoff solenoid	
cm ³ /1000 strokes	: 20.0	Volt	: 12
Shutoff solenoid		Rated speed rpm	: 1600
Volt	: 12	SV travel mm	: 4.8
LOAD-DEPENDENT START OF DELIVERY SETTING			
Rated speed rpm	: 1200	Tolerance mm	: 0.3
Del. quantity		Check	
cm ³ /1000 strokes	: -14.0	tolerance mm	: 0.7
Tolerance		Shutoff solenoid	
cm ³ /1000 strokes	: 1.0	Volt	: 12
Shutoff solenoid		SUPPLY PUMP PRESSURE CHARACTERISTIC	
Volt	: 12	Rated speed rpm	: 2100
PRESSURE DIFFERENCE			
Rated speed rpm	: 1200	Supply pump	
Del. quantity		pressure bar	: 8.6
cm ³ /1000 strokes	: -0.2	Tolerance hPa	: 0.3
Tolerance		Shutoff solenoid	
cm ³ /1000 strokes	: 0.1	Volt	: 12
Shutoff solenoid		Rated speed rpm	: 600
Volt	: 12	Supply pump	
TIMING-DEVICE TRAVEL DIFFERENCE			
Rated speed rpm	: 1200	pressure bar	: 4.2
Del. quantity		Tolerance	: 0.3
cm ³ /1000 strokes	: -0.8	Shutoff solenoid	
Tolerance		Volt	: 12
cm ³ /1000 strokes	: 0.1	OVERFLOW QUANTITY	
Shutoff solenoid		Rated speed rpm	: 2100
Volt	: 12	Overflow quantity	
<hr/> INJECTION-PUMP TEST SPECIFICATIONS			
TIMING DEVICE CHARACTERISTIC			
Rated speed rpm	: 1800	ccm/10s	: 97.2
Tolerance mm	: 0.3	Tolerance	: 41.6
Check		ccm/10s	: 41.6
tolerance mm	: 0.7	Shutoff solenoid	
Shutoff solenoid		Volt	: 12
Volt	: 12	Rated speed rpm	: 600
DELIVERY AND BREAKAWAY CHARACTERISTIC			

Del. quantity
 cm³/1000 strokes : -18.0
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 4.0
 Shutoff solenoid
 Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1200
 Del. quantity
 cm³/1000 strokes : -0.8
 Tolerance
 cm³/1000 strokes : 0.1
 Check tolerance
 cm³/1000S. : 0.1
 Shutoff solenoid
 Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1200
 Del. quantity
 cm³/1000 strokes : 1.5
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000S. : 1.5
 Shutoff solenoid
 Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1200
 Tolerance mm : 0.4
 Check
 tolerance mm : 0.4
 Shutoff solenoid
 Volt : 12

EXHAUST-GAS RECIRCULATION

Rated speed rpm : 1200
 Del. quantity
 cm³/1000 strokes : 20.0
 Tolerance
 cm³/1000 strokes : 0.5
 Check tolerance
 cm³/1000S. : 2.5
 Shutoff solenoid
 Volt : 12

START TRANSITION

Rated speed rpm : 500
 Del. quantity
 cm³/1000 strokes : 35.0

Tolerance
 cm³/1000 strokes : 10.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 300
 Del. quantity
 cm³/1000 strokes : 70.0
 Tolerance
 cm³/1000 strokes : 15.0
 Shutoff solenoid
 Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : -
 Dimension KF mm : 5,8
 Tolerance mm : ±0,2
 Dimension MS mm : 1,8
 Tolerance mm : ±0,2
 KSB travel mm : 10,0
 TLA travel mm : 9,0

MICROSWITCH SET

mm : 0,8...3,0

CONTROL LEVER POSITION SET

Control lever
 position YA mm : 42,8..44,8
 Control lever
 position YB mm : 60,8..69,2

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.03.95
Test oil : ISO 4113

Part no. : 0 460 404 082
Pump designation : VE4/10F2050R591

Customer-spec. information

Customer : IVECO-SOFIM
Motor : 8140.67.2560
Power KW : 56.0

TEST BENCH REQUIREMENTS

Calibrating-oil return

temperature °C : 45
Tolerance °C : 1

Overflow restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder assembly : 1 688 901 022

Opening pressure bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Prestroke

F05

(as of UT) mm : 0,2
Tolerance mm : 0,02
Check tolerance mm : 0,04

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1200
Setting mm : 2.2
Tolerance mm : 0.1
Shutoff solenoid Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1200
Setting hPa : 6.3
Tolerance hPa : 0.3
Shutoff solenoid Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1200
Del. quantity cm³/1000 strokes : 42.5
Tolerance cm³/1000 strokes : 0.5
Spread cm³/1000 strokes : 2.5
Shutoff solenoid Volt : 12

IDLE SETTING

Rated speed rpm : 375
Del. quantity cm³/1000 strokes : 14.0
Tolerance cm³/1000 strokes : 2.0
Shutoff solenoid Volt : 12
Spread cm³/1000 strokes : 2.5
Check tolerance cm³/1000s. : 2.5

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2300
Del. quantity cm³/1000 strokes : 25.0

Tolerance		Shutoff solenoid	
cm ³ /1000 strokes	: 2.0	Volt	: 12
Shutoff solenoid		Rated speed rpm	: 2100
Volt	: 12	SV travel mm	: 7.4
STARTING FUEL DELIVERY			
Rated speed rpm	: 100	Tolerance mm	: 0.4
Del. quantity		Check	
cm ³ /1000 strokes	: 90.0	tolerance mm	: 0.7
Tolerance		Shutoff solenoid	
cm ³ /1000 strokes	: 20.0	Volt	: 12
Shutoff solenoid		Rated speed rpm	: 1600
Volt	: 12	SV travel mm	: 4.9
LOAD-DEPENDENT START OF DELIVERY SETTING			
Rated speed rpm	: 1200	Tolerance mm	: 0.4
Del. quantity		Check	
cm ³ /1000 strokes	: -14.0	tolerance mm	: 0.7
Tolerance		Shutoff solenoid	
cm ³ /1000 strokes	: 1.0	Volt	: 12
Shutoff solenoid		SUPPLY PUMP PRESSURE CHARACTERISTIC	
Volt	: 12	Rated speed rpm	: 2100
PRESSURE DIFFERENCE			
Rated speed rpm	: 1200	Supply pump	
Del. quantity		pressure bar	: 8.8
cm ³ /1000 strokes	: -0.2	Tolerance hPa	: 0.3
Tolerance		Shutoff solenoid	
cm ³ /1000 strokes	: 0.1	Volt	: 12
Shutoff solenoid		Rated speed rpm	: 600
Volt	: 12	Supply pump	
TIMING-DEVICE TRAVEL DIFFERENCE			
Rated speed rpm	: 1200	pressure bar	: 4.4
Del. quantity		Tolerance hPa	: 0.3
cm ³ /1000 strokes	: -0.8	Shutoff solenoid	
Tolerance		Volt	: 12
cm ³ /1000 strokes	: 0.1	OVERFLOW QUANTITY	
Shutoff solenoid		Rated speed rpm	: 2100
Volt	: 12	Overflow quantity	
<hr/> INJECTION-PUMP TEST SPECIFICATIONS			
TIMING DEVICE CHARACTERISTIC			
Rated speed rpm	: 1800	ccm/10s	: 97.2
Tolerance mm	: 0.3	Tolerance	
Check		ccm/10s	: 41.6
tolerance mm	: 0.7	Check tolerance	
		ccm/10s	: 41.6
		Shutoff solenoid	
		Volt	: 12
<hr/>			
Rated speed rpm	: 600	Overflow quantity	
		ccm/10s	: 63.8
		Tolerance	
		ccm/10s	: 22.2
		Check tolerance	
		ccm/10s	: 22.2
		Shutoff solenoid	
		Volt	: 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2300
 Del. quantity
 cm3/1000 strokes : 25.0
 Tolerance
 cm3/1000 strokes : 2.0
 Check tolerance
 cm3/1000S. : 6.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2400
 Del. quantity
 cm3/1000 strokes : 10.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2600
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2100
 Del. quantity
 cm3/1000 strokes : 40.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 2.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1500
 Del. quantity
 cm3/1000 strokes : 42.0
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 2.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 600
 Del. quantity
 cm3/1000 strokes : 38.0
 Tolerance
 cm3/1000 strokes : 2.0
 Check tolerance
 cm3/1000S. : 3.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1200

Del. quantity
 cm3/1000 strokes : 42.5
 Tolerance
 cm3/1000 strokes : 0.5
 Check tolerance
 cm3/1000S. : 2.0
 Shutoff solenoid
 Volt : 12

ELECTR. SHUTOFF
 CONTROL LEVER, IDLE STOP

Rated speed rpm : 375
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5
 Spread
 cm3/1000 strokes : 5.0

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 375
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Spread
 cm3/1000 strokes : 5.0
 Check tolerance
 cm3/1000S. : 1.5
 Spread
 cm3/1000 strokes : 5.0

IDLE DELIVERY

Rated speed rpm : 465
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5
 Shutoff solenoid
 Volt : 12

CHECKING LOAD-DEPENDENT
 START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1200

Del. quantity
cm³/1000 strokes : -18.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 4.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1200
Del. quantity
cm³/1000 strokes : -0.8
Tolerance
cm³/1000 strokes : 0.1
Check tolerance
cm³/1000S. : 0.1
Shutoff solenoid
Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1200
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1200
Tolerance mm : 0.4
Check
tolerance mm : 0.4
Shutoff solenoid
Volt : 12

EXHAUST-GAS RECIRCULATION

Rated speed rpm : 1200
Del. quantity
cm³/1000 strokes : 31.5
Tolerance
cm³/1000 strokes : 0.5
Check tolerance
cm³/1000S. : 2.5
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 35.0

Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 70.0
Tolerance
cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : -
Dimension KF mm : 5,8
Tolerance mm : +0,2
Dimension MS mm : 1,8
Tolerance mm : +0,2
KSB travel mm : 10,0
TLA travel mm : 9,0

MICROSWITCH SET

mm : 0,8...3,0

CONTROL LEVER POSITION SET

Control lever
position YA mm : 42,9..44,9

Control lever
position YB mm : 36,0..44,0

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.10.94
Test oil : ISO 4113

Part no. : 0 460 494 368
Pump designation : VE4/9F2200R603

Customer-spec. information

Customer : VW
Motor : 1,9 l UD MVEG 2
Power KW : 55.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 111

Opening pressure
bar : 147
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 0,8
Tolerance mm : ±0,02
Outlet : A

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250
Aneroid pressure
hPa : 750

Setting mm : 5.5
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Aneroid pressure
hPa : 750

Setting hPa : 5.8
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1250
Aneroid pressure
hPa : 750
Del. quantity
cm³/1000 strokes : 46.5
Tolerance
cm³/1000 strokes : 0.5
Spread
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Check tolerance
cm³/1000S. : 3.0

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 8.0
Tolerance
cm³/1000 strokes : 0.5

Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2525
Pressure hPa : 750
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

SET GRADUATED STARTING DELIVERY
CONTROL LEVER, IDLE STOP

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 43.0
Tolerance
cm³/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
Aneroid pressure
hPa : 750
Tolerance mm : 0.4
Check
tolerance mm : 0.8
Shutoff solenoid
Volt : 12

Rated speed rpm : 750
Aneroid pressure
hPa : 750

SV travel mm : 3.4
Tolerance mm : 0.4
Check
tolerance mm : 0.8
Shutoff solenoid
Volt : 12

Rated speed rpm : 2000
Aneroid pressure
hPa : 750

SV travel mm : 0.8
Tolerance mm : 0.4

Shutoff solenoid
Volt : 12

Timing device
solenoid Volt : 100

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2000
Aneroid pressure
hPa : 750
Supply pump
pressure bar : 8.0
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 750
Aneroid pressure
hPa : 750
Supply pump
pressure bar : 4.3
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 1250
Aneroid pressure
hPa : 750
Overflow quantity
ccm/10s : 77.7
Tolerance
ccm/10s : 22.2
Check tolerance
ccm/10s : 34.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 2100
Aneroid pressure
hPa : 750
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6

Check tolerance
ccm/10s : 55.5
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2525
Aneroid pressure
hPa : 750

Del. quantity cm ³ /1000 strokes	:	20.0	Tolerance cm ³ /1000 strokes	:	0.5
Tolerance cm ³ /1000 strokes	:	2.0	Check tolerance cm ³ /1000S.	:	2.2
Check tolerance cm ³ /1000S.	:	4.0	Shutoff solenoid		
Shutoff solenoid			Volt	:	12
Volt	:	12	Rated speed rpm	:	700
Rated speed rpm	:	2400	Aneroid pressure		
Aneroid pressure			hPa	:	180
hPa	:	750	Tolerance cm ³ /1000 strokes	:	0.5
Del. quantity cm ³ /1000 strokes	:	34.5	Check tolerance cm ³ /1000S.	:	0.5
Tolerance cm ³ /1000 strokes	:	5.0	Check tolerance cm ³ /1000S.	:	0.5
Check tolerance cm ³ /1000S.	:	6.0	Shutoff solenoid		
Shutoff solenoid			Volt	:	12
Volt	:	12	Rated speed rpm	:	700
Rated speed rpm	:	2750	Aneroid pressure		
Aneroid pressure			hPa	:	300
hPa	:	750	Del. quantity cm ³ /1000 strokes	:	6.0
Del. quantity cm ³ /1000 strokes	:	1.5	Check tolerance cm ³ /1000S.	:	1.0
Tolerance cm ³ /1000 strokes	:	1.5	Shutoff solenoid		
Check tolerance cm ³ /1000S.	:	1.5	Volt	:	12
Shutoff solenoid			ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP		
Volt	:	12	Rated speed rpm	:	450
Rated speed rpm	:	2100	Del. quantity cm ³ /1000 strokes	:	1.5
Aneroid pressure			Tolerance cm ³ /1000 strokes	:	1.5
hPa	:	750	Check tolerance cm ³ /1000S.	:	1.5
Del. quantity cm ³ /1000 strokes	:	46.2	START TRANSITION		
Tolerance cm ³ /1000 strokes	:	1.0	Rated speed rpm	:	380
Check tolerance cm ³ /1000S.	:	2.2	Del. quantity cm ³ /1000 strokes	:	41.0
Shutoff solenoid			Tolerance cm ³ /1000 strokes	:	10.0
Volt	:	12	Shutoff solenoid		
Rated speed rpm	:	450	Volt	:	12
Del. quantity cm ³ /1000 strokes	:	44.7			
Tolerance cm ³ /1000 strokes	:	3.0			
Check tolerance cm ³ /1000S.	:	5.5			
Shutoff solenoid					
Volt	:	12			
Rated speed rpm	:	1250			
Aneroid pressure					
hPa	:	750			
Del. quantity cm ³ /1000 strokes	:	46.5			

Rated speed rpm : 180
Del. quantity
cm3/1000 strokes : 45.0
Tolerance
cm3/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,7
Tolerance mm : +0,1
Dimension KF mm : 6,0
Tolerance mm : +0,2
Dimension MS mm : 1,2
Tolerance mm : +0,2

End of test-specification sheet

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BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.05.95
Test oil : ISO 4113

Part no. : 0 460 494 413
Pump designation : VE4/9F2200R603-1

Customer-spec. information

Customer : VW
Motor : 1,9 L UD MVEG 2
Power KW : 55.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 111

Opening pressure
bar : 147
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250
Aneroid pressure hPa : 750
Setting mm : 5.5
Tolerance mm : 0.2
Shutoff solenoid Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Aneroid pressure hPa : 750
Setting hPa : 5.8
Tolerance hPa : 0.3
Shutoff solenoid Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1250
Aneroid pressure hPa : 750
Del. quantity cm³/1000 strokes : 46.5
Tolerance cm³/1000 strokes : 0.5
Spread cm³/1000 strokes : 2.5
Check tolerance cm³/1000s. : 3.0
Shutoff solenoid Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Check tolerance cm³/1000s. : 3.0

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 550
Del. quantity cm³/1000 strokes : 8.0
Tolerance cm³/1000 strokes : 0.5
Shutoff solenoid Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2525
Pressure hPa : 750

Del. quantity cm ³ /1000 strokes	:	20.0	+	Rated speed rpm	:	2000
Tolerance cm ³ /1000 strokes	:	2.0	+	Aneroid pressure hPa	:	750
Shutoff solenoid			+	Supply pump pressure bar	:	8.0
Volt	:	12	+	Tolerance hPa	:	0.3
			+	Shutoff solenoid		
			+	Volt	:	12

SET GRADUATED STARTING DELIVERY
CONTROL LEVER, IDLE STOP

Rated speed rpm	:	100	+	Rated speed rpm	:	750
Del. quantity cm ³ /1000 strokes	:	43.0	+	Aneroid pressure hPa	:	750
Tolerance cm ³ /1000 strokes	:	3.0	+	Supply pump pressure bar	:	4.3
Shutoff solenoid			+	Tolerance hPa	:	0.3
Volt	:	12	+	Shutoff solenoid		
			+	Volt	:	12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm	:	2000	+	Check tolerance ccm/10s	:	34.7
Aneroid pressure hPa	:	750	+	Shutoff solenoid		
Tolerance mm	:	0.4	+	Volt	:	12
Check tolerance mm	:	0.8	+	Rated speed rpm	:	2100
Shutoff solenoid			+	Aneroid pressure hPa	:	750
Volt	:	12	+	Overflow quantity ccm/10s	:	97.2

Rated speed rpm	:	750	+	Tolerance ccm/10s	:	41.6
Aneroid pressure hPa	:	750	+	Check tolerance ccm/10s	:	55.5
SV travel mm	:	3.4	+	Shutoff solenoid		
Tolerance mm	:	0.4	+	Volt	:	12
Check tolerance mm	:	0.8	+	DELIVERY AND BREAKAWAY CHARACTERISTIC		
Shutoff solenoid			+			
Volt	:	12	+			

Rated speed rpm	:	2000	+	Rated speed rpm	:	2525
Aneroid pressure hPa	:	750	+	Aneroid pressure hPa	:	750
SV travel mm	:	0.8	+	Del. quantity cm ³ /1000 strokes	:	20.0
Tolerance mm	:	0.4	+	Tolerance cm ³ /1000 strokes	:	2.0
Shutoff solenoid			+	Check tolerance cm ³ /1000S.	:	4.0
Volt	:	12	+	Shutoff solenoid		

Timing device solenoid Volt	:	100	+	Volt	:	12
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SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm	:	2400	Aneroid pressure		
Aneroid pressure			hPa	:	180
hPa	:	750	Tolerance		0.5
Del. quantity			cm ³ /1000 strokes	:	0.5
cm ³ /1000 strokes	:	34.5	Check tolerance		0.5
Tolerance			cm ³ /1000S.	:	0.5
cm ³ /1000 strokes	:	5.0	Check tolerance		0.5
Check tolerance			cm ³ /1000S.	:	0.5
cm ³ /1000S.	:	6.0	Shutoff solenoid		
Shutoff solenoid			Volt	:	12
Volt	:	12			
Rated speed rpm	:	2750	Rated speed rpm	:	700
Aneroid pressure			Aneroid pressure		
hPa	:	750	hPa	:	300
Del. quantity			Del. quantity		6.0
cm ³ /1000 strokes	:	1.5	cm ³ /1000 strokes	:	1.0
Tolerance			Check tolerance		
cm ³ /1000 strokes	:	1.5	cm ³ /1000S.	:	
Check tolerance			Shutoff solenoid		
cm ³ /1000S.	:	1.5	Volt	:	12
Shutoff solenoid					
Volt	:	12			
Rated speed rpm	:	2100	ELECTR. SHUTOFF		
Aneroid pressure			CONTROL LEVER, IDLE STOP		
hPa	:	750	Rated speed rpm	:	450
Del. quantity			Del. quantity		1.5
cm ³ /1000 strokes	:	46.2	cm ³ /1000 strokes	:	1.5
Tolerance			Tolerance		1.5
cm ³ /1000 strokes	:	1.0	cm ³ /1000 strokes	:	1.5
Check tolerance			Check tolerance		
cm ³ /1000S.	:	2.2	cm ³ /1000S.	:	1.5
Shutoff solenoid			Spread		
Volt	:	12	cm ³ /1000 strokes	:	5.0
Rated speed rpm	:	450	FULL-LOAD STOP CONTROL LEVER		
Del. quantity			Rated speed rpm	:	450
cm ³ /1000 strokes	:	44.7	Del. quantity		1.5
Tolerance			cm ³ /1000 strokes	:	1.5
cm ³ /1000 strokes	:	3.0	Tolerance		1.5
Check tolerance			cm ³ /1000 strokes	:	1.5
cm ³ /1000S.	:	5.5	Spread		
Shutoff solenoid			cm ³ /1000 strokes	:	5.0
Volt	:	12	Check tolerance		
Rated speed rpm	:	1250	cm ³ /1000S.	:	1.5
Aneroid pressure			Spread		
hPa	:	750	cm ³ /1000 strokes	:	5.0
Del. quantity					
cm ³ /1000 strokes	:	46.5			
Tolerance					
cm ³ /1000 strokes	:	0.5			
Check tolerance					
cm ³ /1000S.	:	2.2			
Shutoff solenoid					
Volt	:	12			
Rated speed rpm	:	700	START TRANSITION		
			Rated speed rpm	:	380

Del. quantity
cm³/1000 strokes : 41.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 180
Del. quantity
cm³/1000 strokes : 45.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,7
Tolerance mm : ±0,1
Dimension KF mm : 6,0
Tolerance mm : ±0,2
Dimension MS mm : 1,2
Tolerance mm : ±0,2

CONTROL LEVER POSITION SET

Control lever
position YA mm : 36,0..40,0

Control lever
position YB mm : 48,6..58,4

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.06.95
Test oil : ISO 4113

Part no. : 0 460 494 416
Pump designation : VE4/9F2200R604-1

Customer-spec. information

Customer : VW
Motor : 1,9 L UD MVEG 2
Power KW : 55.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 111

Opening pressure
bar : 147
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00
x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250
Aneroid pressure hPa : 750
Setting mm : 5.5
Tolerance mm : 0.2
Shutoff solenoid Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Aneroid pressure hPa : 750
Setting hPa : 5.8
Tolerance hPa : 0.3
Shutoff solenoid Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1250
Aneroid pressure hPa : 750
Del. quantity cm³/1000 strokes : 46.5
Tolerance cm³/1000 strokes : 0.5
Spread cm³/1000 strokes : 2.5
Check tolerance cm³/1000S. : 3.0
Shutoff solenoid Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Check tolerance cm³/1000S. : 3.0

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 550
Del. quantity cm³/1000 strokes : 8.0
Tolerance cm³/1000 strokes : 0.5
Shutoff solenoid Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2525
Pressure hPa : 750

Del. quantity
 cm³/1000 strokes : 20.0
 Tolerance
 cm³/1000 strokes : 2.0
 Shutoff solenoid
 Volt : 12

SET GRADUATED STARTING DELIVERY
CONTROL LEVER, IDLE STOP

Rated speed rpm : 100
 Del. quantity
 cm³/1000 strokes : 43.0
 Tolerance
 cm³/1000 strokes : 3.0
 Shutoff solenoid
 Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
 Aneroid pressure
 hPa : 750
 SV travel mm : 8.6
 Tolerance mm : 0.4
 Check
 tolerance mm : 0.8
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 750
 Aneroid pressure
 hPa : 750
 SV travel mm : 3.4
 Tolerance mm : 0.4
 Check
 tolerance mm : 0.8
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2000
 Aneroid pressure
 hPa : 750

SV travel mm : 0.8
 Tolerance mm : 0.4
 Shutoff solenoid
 Volt : 12

Timing device
 solenoid Volt : 100

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2000
 Aneroid pressure
 hPa : 750
 Supply pump
 pressure bar : 8.0
 Tolerance hPa : 0.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 750
 Aneroid pressure
 hPa : 750
 Supply pump
 pressure bar : 4.3
 Tolerance hPa : 0.3
 Shutoff solenoid
 Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 1250
 Aneroid pressure
 hPa : 750
 Overflow quantity
 ccm/10s : 77.7
 Tolerance
 ccm/10s : 22.2
 Check tolerance
 ccm/10s : 34.7
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2100
 Aneroid pressure
 hPa : 750
 Overflow quantity
 ccm/10s : 97.2
 Tolerance
 ccm/10s : 41.6
 Check tolerance
 ccm/10s : 55.5
 Shutoff solenoid
 Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2525
 Aneroid pressure
 hPa : 750
 Del. quantity
 cm³/1000 strokes : 20.0
 Tolerance
 cm³/1000 strokes : 2.0
 Check tolerance
 cm³/1000s. : 4.0

Shutoff solenoid			
Volt	: 12		
Rated speed rpm	: 2400		
Aneroid pressure			
hPa	: 750		
Del. quantity			
cm ³ /1000 strokes	: 34.5		
Tolerance			
cm ³ /1000 strokes	: 5.0		
Check tolerance			
cm ³ /1000S.	: 6.0		
Shutoff solenoid			
Volt	: 12		
Rated speed rpm	: 2750		
Aneroid pressure			
hPa	: 750		
Del. quantity			
cm ³ /1000 strokes	: 1.5		
Tolerance			
cm ³ /1000 strokes	: 1.5		
Check tolerance			
cm ³ /1000S.	: 1.5		
Shutoff solenoid			
Volt	: 12		
Rated speed rpm	: 2100		
Aneroid pressure			
hPa	: 750		
Del. quantity			
cm ³ /1000 strokes	: 46.2		
Tolerance			
cm ³ /1000 strokes	: 1.0		
Check tolerance			
cm ³ /1000S.	: 2.2		
Shutoff solenoid			
Volt	: 12		
Rated speed rpm	: 450		
Del. quantity			
cm ³ /1000 strokes	: 44.7		
Tolerance			
cm ³ /1000 strokes	: 3.0		
Check tolerance			
cm ³ /1000S.	: 5.5		
Shutoff solenoid			
Volt	: 12		
Rated speed rpm	: 1250		
Aneroid pressure			
hPa	: 750		
Del. quantity			
cm ³ /1000 strokes	: 46.5		
Tolerance			
cm ³ /1000 strokes	: 0.5		
Check tolerance			
cm ³ /1000S.	: 2.2		
Shutoff solenoid			
Volt	: 12		
ELECTR. SHUTOFF			
CONTROL LEVER, IDLE STOP			
Rated speed rpm	: 450		
Del. quantity			
cm ³ /1000 strokes	: 1.5		
Tolerance			
cm ³ /1000 strokes	: 1.5		
Check tolerance			
cm ³ /1000S.	: 1.5		
Spread			
cm ³ /1000 strokes	: 5.0		
FULL-LOAD STOP CONTROL LEVER			
Rated speed rpm	: 450		
Del. quantity			
cm ³ /1000 strokes	: 1.5		
Tolerance			
cm ³ /1000 strokes	: 1.5		
Spread			
cm ³ /1000 strokes	: 5.0		
Check tolerance			
cm ³ /1000S.	: 1.5		
Spread			
cm ³ /1000 strokes	: 5.0		
START TRANSITION			

Rated speed rpm : 380
Del. quantity
cm³/1000 strokes : 41.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 180
Del. quantity
cm³/1000 strokes : 45.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,7
Tolerance mm : $\pm 0,1$
Dimension KF mm : 6,0
Tolerance mm : $\pm 0,2$
Dimension MS mm : 1,2
Tolerance mm : $\pm 0,2$

MICROSWITCH SET

mm : 0,8...3,0
: ARF 12,0

CONTROL LEVER POSITION SET

Control lever
position YA mm : 36,0..40,0

Control lever
position YB mm : 48,6..58,4

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.01.96
Test oil : ISO 4113

Part no. : 0 460 426 243
Pump designation : VE6/12F1100R620

Customer-spec. information
Customer : CASE
Motor : 6T 590

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 027

Opening pressure
bar : 250
Tolerance bar : 3

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 840

REMARKS

BEGINNING OF DELIVERY

Prestroke

(as of UT) mm : 0,3
Tolerance mm : +0,02
Check
tolerance mm : +0,04

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 750
Setting mm : 2.6
Tolerance mm : 0.2
Shutoff solenoid
Volt : 24

SUPPLY PUMP PRESSURE

Rated speed rpm : 750
Setting hPa : 5.7
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 24

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 900
Del. quantity
cm3/1000 strokes : 61.0
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 4.0
Shutoff solenoid
Volt : 24

IDLE SETTING

Rated speed rpm : 350
Del. quantity
cm3/1000 strokes : 20.0
Tolerance
cm3/1000 strokes : 3.5
Shutoff solenoid
Volt : 24
Spread
cm3/1000 strokes : 9.0
Check tolerance
cm3/1000S. : 9.0

FULL-LOAD SPEED REGULATION

Rated speed rpm : 1140
Del. quantity
cm3/1000 strokes : 60.0
Tolerance
cm3/1000 strokes : 3.0

Shutoff solenoid		Overflow quantity	
Volt	: 24	ccm/10s	: 63.8
STARTING FUEL DELIVERY			
Rated speed rpm	: 100	Tolerance	: 22.2
Del. quantity		ccm/10s	: 22.2
cm3/1000 strokes	: 85.0	Shutoff solenoid	
Tolerance		Volt	: 24
cm3/1000 strokes	: 30.0	DELIVERY AND BREAKAWAY CHARACTERISTIC	
Shutoff solenoid		Rated speed rpm	: 1140
Volt	: 24	Del. quantity	: 60.0
INJECTION-PUMP TEST SPECIFICATIONS			
TIMING DEVICE CHARACTERISTIC			
Rated speed rpm	: 1000	Tolerance	: 3.0
SV travel mm	: 4.4	Check tolerance	: 6.0
Tolerance mm	: 0.4	cm3/1000S.	: 6.0
Check		Shutoff solenoid	
tolerance mm	: 0.7	Volt	: 24
Shutoff solenoid		Rated speed rpm	: 1175
Volt	: 24	Del. quantity	: 30.0
SUPPLY PUMP PRESSURE CHARACTERISTIC			
Rated speed rpm	: 1000	Check tolerance	: 15.0
Supply pump		cm3/1000S.	: 15.0
pressure bar	: 6.7	Shutoff solenoid	
Tolerance hPa	: 0.3	Volt	: 24
Shutoff solenoid		Rated speed rpm	: 1240
Volt	: 24	Del. quantity	: 1.5
Rated speed rpm	: 500	Tolerance	: 1.5
Supply pump		cm3/1000 strokes	: 1.5
pressure bar	: 4.7	Check tolerance	: 1.5
Tolerance hPa	: 0.3	cm3/1000S.	: 1.5
Shutoff solenoid		Shutoff solenoid	
Volt	: 24	Volt	: 24
OVERFLOW QUANTITY			
Rated speed rpm	: 1100	Rated speed rpm	: 1100
Overflow quantity		Del. quantity	: 61.0
ccm/10s	: 83.3	Tolerance	: 1.5
Tolerance		cm3/1000 strokes	: 1.5
ccm/10s	: 27.7	Check tolerance	: 3.0
Check tolerance		cm3/1000S.	: 3.0
ccm/10s	: 27.7	Shutoff solenoid	
Shutoff solenoid		Volt	: 24
Volt	: 24	Rated speed rpm	: 750
Rated speed rpm	: 500	Del. quantity	: 58.0
		Tolerance	: 2.0
		cm3/1000 strokes	: 2.0
		Check tolerance	: 4.0
		cm3/1000S.	: 4.0
		Shutoff solenoid	
		Volt	: 24

Rated speed rpm : 500
 Del. quantity
 cm³/1000 strokes : 35.0
 Tolerance
 cm³/1000 strokes : 6.0
 Check tolerance
 cm³/1000S. : 6.0
 Shutoff solenoid
 Volt : 24

 Rated speed rpm : 900
 Del. quantity
 cm³/1000 strokes : 61.0
 Tolerance
 cm³/1000 strokes : 0.5
 Check tolerance
 cm³/1000S. : 3.0
 Shutoff solenoid
 Volt : 24

**ELECTR. SHUTOFF
CONTROL LEVER, IDLE STOP**

Rated speed rpm : 500
 Del. quantity
 cm³/1000 strokes : 1.5
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000S. : 1.5

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 500
 Del. quantity
 cm³/1000 strokes : 1.5
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000S. : 1.5

IDLE DELIVERY

Rated speed rpm : 520
 Del. quantity
 cm³/1000 strokes : 1.5
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000S. : 1.5
 Shutoff solenoid
 Volt : 24

Rated speed rpm : 425
 Del. quantity
 cm³/1000 strokes : 7.0
 Tolerance
 cm³/1000 strokes : 3.5

START TRANSITION

Rated speed rpm : 250
 Del. quantity
 cm³/1000 strokes : 78.0
 Tolerance
 cm³/1000 strokes : 15.0
 Shutoff solenoid
 Volt : 24

Rated speed rpm : 150
 Del. quantity
 cm³/1000 strokes : 100.0
 Tolerance
 cm³/1000 strokes : 30.0
 Shutoff solenoid
 Volt : 24

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension KF mm : 5,2
 Tolerance mm : +0,2
 MS1 dimension mm : 1,36
 Tolerance mm : +0,15/-0,1

**CONTROL LEVER POSITION
SET**

Control lever position YA mm : 34,8..38,8

Control lever position YB mm : 39,9..45,1

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.10.95
Test oil : ISO 4113

Part no. : 0 460 484 081
Pump designation : VE4/8F2400R622

Customer-spec. information

Customer : FORD
Motor : 1,8 L IDI
Power KW : 44.0

TEST BENCH REQUIREMENTS

Calibrating-oil return

temperature °C : 45
Tolerance °C : 1

Overflow restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder assembly : 1 688 901 022

Opening pressure bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 0,85
Tolerance mm : ±0,05
Outlet : 8

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1500

Setting mm : 5.1
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1500

Setting hPa : 6.8
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : 29.0
Tolerance
cm³/1000 strokes : 0.2
Spread
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 3.0
Tolerance
cm³/1000 strokes : 0.5
Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2550
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY		Tolerance mm	:	0.4
Rated speed rpm : 100		Check		
Del. quantity cm ³ /1000 strokes : 60.0		tolerance mm	:	0.8
Tolerance cm ³ /1000 strokes : 10.0		Shutoff solenoid		
Shutoff solenoid Volt : 12		Volt	:	12
LOAD-DEPENDENT START OF DELIVERY SETTING		Rated speed rpm	:	400
DELIVERY DIFFERENCE		SV travel mm	:	2.4
Rated speed rpm : 1200		Tolerance mm	:	0.1
Del. quantity cm ³ /1000 strokes : -9.4		Check		
Tolerance cm ³ /1000 strokes : 1.0		tolerance mm	:	1.0
Shutoff solenoid Volt : 12		Shutoff solenoid		
PRESSURE DIFFERENCE		Volt	:	12
Rated speed rpm : 1200		KSB/AFB Volt	:	12
Del. quantity cm ³ /1000 strokes : -0.2		Rated speed rpm	:	1000
Tolerance cm ³ /1000 strokes : 0.1		SV travel mm	:	4.4
Shutoff solenoid Volt : 12		Tolerance mm	:	1.2
TIMING-DEVICE TRAVEL DIFFERENCE		Check		
Rated speed rpm : 1200		tolerance mm	:	1.3
Del. quantity cm ³ /1000 strokes : -0.8		Shutoff solenoid		
Tolerance cm ³ /1000 strokes : 0.1		Volt	:	12
Shutoff solenoid Volt : 12		KSB/AFB Volt	:	12
SUPPLY PUMP PRESSURE CHARACTERISTIC				
Rated speed rpm : 2400		Rated speed rpm	:	2400
Supply pump		Supply pump		
pressure bar		pressure bar	:	9.9
Tolerance hPa		Tolerance hPa	:	0.3
Shutoff solenoid		Shutoff solenoid		
Volt : 12		Volt	:	12
TIMING DEVICE CHARACTERISTIC		Rated speed rpm	:	750
Rated speed rpm : 2400		Supply pump		
Tolerance mm : 0.4		pressure bar	:	4.6
Check		Tolerance hPa	:	0.3
tolerance mm : 0.8		Shutoff solenoid		
Shutoff solenoid Volt : 12		Volt	:	12
OVERFLOW QUANTITY				
INJECTION-PUMP TEST SPECIFICATIONS		Rated speed rpm	:	2400
Overflow quantity ccm/10s : 97.2		Overflow quantity		
Tolerance ccm/10s : 41.6		ccm/10s	:	97.2
Check tolerance ccm/10s : 41.6		Tolerance		
Shutoff solenoid Volt : 12		ccm/10s	:	41.6
Rated speed rpm : 800		Check tolerance		
SV travel mm : 1.5		ccm/10s	:	41.6
Shutoff solenoid		Shutoff solenoid		
Volt : 12		Volt	:	12
Overflow quantity ccm/10s : 63.8		Rated speed rpm	:	450
F25		Overflow quantity		
		ccm/10s	:	63.8

Tolerance ccm/10s	:	22.2	Del. quantity cm3/1000 strokes	:	29.3			
Check tolerance ccm/10s	:	22.2	Tolerance cm3/1000 strokes	:	1.5			
Shutoff solenoid Volt	:	12	Check tolerance cm3/1000S.	:	2.3			
DELIVERY AND BREAKAWAY CHARACTERISTIC								
Rated speed rpm	:	2550	Shutoff solenoid Volt	:	12			
Del. quantity cm3/1000 strokes	:	20.0	Rated speed rpm	:	450			
Tolerance cm3/1000 strokes	:	3.0	Del. quantity cm3/1000 strokes	:	31.5			
Check tolerance cm3/1000S.	:	4.5	Tolerance cm3/1000 strokes	:	2.0			
Shutoff solenoid Volt	:	12	Check tolerance cm3/1000S.	:	2.8			
Rated speed rpm	:	2625	Shutoff solenoid Volt	:	12			
Del. quantity cm3/1000 strokes	:	13.5	Rated speed rpm	:	1500			
Check tolerance cm3/1000S.	:	6.0	Del. quantity cm3/1000 strokes	:	29.0			
Shutoff solenoid Volt	:	12	Tolerance cm3/1000 strokes	:	0.2			
Rated speed rpm	:	2950	Check tolerance cm3/1000S.	:	1.7			
Del. quantity cm3/1000 strokes	:	1.0	Shutoff solenoid Volt	:	12			
Tolerance cm3/1000 strokes	:	1.0	<hr/>					
Check tolerance cm3/1000S.	:	1.0	ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP					
Shutoff solenoid Volt	:	12	Rated speed rpm	:	425			
Rated speed rpm	:	2400	Del. quantity cm3/1000 strokes	:	1.5			
Del. quantity cm3/1000 strokes	:	29.3	Tolerance cm3/1000 strokes	:	1.5			
Tolerance cm3/1000 strokes	:	1.0	Check tolerance cm3/1000S.	:	1.5			
Check tolerance cm3/1000S.	:	2.0	Spread cm3/1000 strokes	:	5.0			
Shutoff solenoid Volt	:	12	FULL-LOAD STOP CONTROL LEVER					
Rated speed rpm	:	750	Rated speed rpm	:	425			
Del. quantity cm3/1000 strokes	:	28.4	Del. quantity cm3/1000 strokes	:	1.5			
Tolerance cm3/1000 strokes	:	1.5	Tolerance cm3/1000 strokes	:	1.5			
Check tolerance cm3/1000S.	:	2.3	Spread cm3/1000 strokes	:	5.0			
Shutoff solenoid Volt	:	12	Check tolerance cm3/1000S.	:	1.5			
Rated speed rpm	:	1000	Spread cm3/1000 strokes	:	5.0			

**CHECKING LOAD-DEPENDENT
START OF DELIVERY****DELIVERY DIFFERENCE**

Rated speed rpm : 1200
Del. quantity
cm³/1000 strokes : -10.6
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 4.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1200
Del. quantity
cm³/1000 strokes : -0.8
Tolerance
cm³/1000 strokes : 0.1
Check tolerance
cm³/1000S. : 0.1
Shutoff solenoid
Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1200
Del. quantity
cm³/1000 strokes : 5.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1200
Tolerance mm : 0.4
Check
tolerance mm : 0.4
Shutoff solenoid
Volt : 12

EXHAUST-GAS RECIRCULATION

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : 0.5

Check tolerance
cm³/1000S. : 2.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 10.0
Tolerance
cm³/1000 strokes : 0.5
Check tolerance
cm³/1000S. : 2.5
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 32.0
Tolerance
cm³/1000 strokes : 6.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 275
Del. quantity
cm³/1000 strokes : 65.0
Tolerance
cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : ±0,1
Dimension KF mm : 6,0
Tolerance mm : ±0,2
Dimension MS mm : 1,8
Tolerance mm : ±0,2

POTENTIOMETER**SET**

1. measurement
voltage Volt : 1= 3,4 V
2. measurement
voltage Volt : 2= 1,7 V

MICROSWITCH**SET**

mm : 1=ARF 12,0
: 2=ARF 12,0

CONTROL LEVER POSITION
SET

Control lever
position YA mm : 38,0..42,0

Control lever
position YB mm : 57,3..66,3

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.10.95
Test oil : ISO 4113

Part no. : 0 460 484 082
Pump designation : VE4/8F2400R622-1

Customer-spec. information

Customer : FORD
Motor : 1,8 L IDI
Power KW : 44.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 698 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

G01

Plunger stroke mm : 0,85
Tolerance mm : +-0,05
Outlet : B

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1500
Setting mm : 5.1
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1500
Setting hPa : 6.8
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : 29.0
Tolerance
cm³/1000 strokes : 0.2
Spread
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 3.0
Tolerance
cm³/1000 strokes : 0.5
Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2550
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY		Tolerance mm : 0.4	
Rated speed rpm	: 100	Check tolerance mm : 0.8	
Del. quantity cm ³ /1000 strokes	: 60.0	Shutoff solenoid Volt : 12	
Tolerance cm ³ /1000 strokes	: 10.0	Rated speed rpm : 400	
Shutoff solenoid Volt	: 12	SV travel mm : 2.4	
LOAD-DEPENDENT START OF DELIVERY SETTING		Tolerance mm : 0.1	
DELIVERY DIFFERENCE		Check tolerance mm : 1.0	
Rated speed rpm	: 1200	Shutoff solenoid Volt : 12	
Del. quantity cm ³ /1000 strokes	: -9.4	KSBAFB Volt : 12	
Tolerance cm ³ /1000 strokes	: 1.0	Rated speed rpm : 1000	
Shutoff solenoid Volt	: 12	SV travel mm : 4.4	
PRESSURE DIFFERENCE		Tolerance mm : 1.2	
Rated speed rpm	: 1200	Check tolerance mm : 1.3	
Del. quantity cm ³ /1000 strokes	: -0.2	Shutoff solenoid Volt : 12	
Tolerance cm ³ /1000 strokes	: 0.1	KSBAFB Volt : 12	
Shutoff solenoid Volt	: 12	SUPPLY PUMP PRESSURE CHARACTERISTIC	
TIMING-DEVICE TRAVEL DIFFERENCE		Rated speed rpm : 2400	
Rated speed rpm	: 1200	Supply pump pressure bar : 9.9	
Del. quantity cm ³ /1000 strokes	: -0.8	Tolerance hPa : 0.3	
Tolerance cm ³ /1000 strokes	: 0.1	Shutoff solenoid Volt : 12	
Shutoff solenoid Volt	: 12	Rated speed rpm : 750	
INJECTION-PUMP TEST SPECIFICATIONS		Supply pump pressure bar : 4.6	
TIMING DEVICE CHARACTERISTIC		Tolerance hPa : 0.3	
Rated speed rpm	: 2400	Shutoff solenoid Volt : 12	
Tolerance mm	: 0.4	OVERFLOW QUANTITY	
Check tolerance mm	: 0.8	Rated speed rpm : 2400	
Shutoff solenoid Volt	: 12	Overflow quantity ccm/10s : 97.2	
Rated speed rpm	: 800	Tolerance ccm/10s : 41.6	
SV travel mm	: 1.5	Check tolerance ccm/10s : 41.6	
		Shutoff solenoid Volt : 12	
		Rated speed rpm : 450	
		Overflow quantity ccm/10s : 63.8	

Tolerance ccm/10s	:	22.2	Del. quantity cm3/1000 strokes	:	29.3			
Check tolerance ccm/10s	:	22.2	Tolerance cm3/1000 strokes	:	1.5			
Shutoff solenoid Volt	:	12	Check tolerance cm3/1000S.	:	2.3			
DELIVERY AND BREAKAWAY CHARACTERISTIC								
Rated speed rpm	:	2550	Shutoff solenoid Volt	:	12			
Del. quantity cm3/1000 strokes	:	20.0	Rated speed rpm	:	450			
Tolerance cm3/1000 strokes	:	3.0	Del. quantity cm3/1000 strokes	:	31.5			
Check tolerance cm3/1000S.	:	4.5	Tolerance cm3/1000 strokes	:	2.0			
Shutoff solenoid Volt	:	12	Check tolerance cm3/1000S.	:	2.8			
Rated speed rpm	:	2625	Shutoff solenoid Volt	:	12			
Del. quantity cm3/1000 strokes	:	13.5	Rated speed rpm	:	1500			
Check tolerance cm3/1000S.	:	6.0	Del. quantity cm3/1000 strokes	:	29.0			
Shutoff solenoid Volt	:	12	Tolerance cm3/1000 strokes	:	0.2			
Rated speed rpm	:	2950	Check tolerance cm3/1000S.	:	1.7			
Del. quantity cm3/1000 strokes	:	1.0	Shutoff solenoid Volt	:	12			
Tolerance cm3/1000 strokes	:	1.0	<hr/>					
Check tolerance cm3/1000S.	:	1.0	ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP					
Shutoff solenoid Volt	:	12	Rated speed rpm	:	425			
Rated speed rpm	:	2400	Del. quantity cm3/1000 strokes	:	1.5			
Del. quantity cm3/1000 strokes	:	29.3	Tolerance cm3/1000 strokes	:	1.5			
Tolerance cm3/1000 strokes	:	1.0	Check tolerance cm3/1000S.	:	1.5			
Check tolerance cm3/1000S.	:	2.0	Spread cm3/1000 strokes	:	5.0			
Shutoff solenoid Volt	:	12	FULL-LOAD STOP CONTROL LEVER					
Rated speed rpm	:	750	Rated speed rpm	:	425			
Del. quantity cm3/1000 strokes	:	28.4	Del. quantity cm3/1000 strokes	:	1.5			
Tolerance cm3/1000 strokes	:	1.5	Tolerance cm3/1000 strokes	:	1.5			
Check tolerance cm3/1000S.	:	2.3	Spread cm3/1000 strokes	:	5.0			
Shutoff solenoid Volt	:	12	Check tolerance cm3/1000S.	:	1.5			
Rated speed rpm	:	1000	Spread cm3/1000 strokes	:	5.0			

**CHECKING LOAD-DEPENDENT
START OF DELIVERY****DELIVERY DIFFERENCE**

Rated speed rpm : 1200
Del. quantity
cm3/1000 strokes : -10.6
Tolerance
cm3/1000 strokes : 4.0
Check tolerance
cm3/1000S. : 4.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1200
Del. quantity
cm3/1000 strokes : -0.8
Tolerance
cm3/1000 strokes : 0.1
Check tolerance
cm3/1000S. : 0.1
Shutoff solenoid
Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1200
Del. quantity
cm3/1000 strokes : 5.0
Tolerance
cm3/1000 strokes : 3.0
Check tolerance
cm3/1000S. : 3.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1200
Tolerance mm : 0.4
Check
tolerance mm : 0.4
Shutoff solenoid
Volt : 12

EXHAUST-GAS RECIRCULATION

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : 20.0
Tolerance
cm3/1000 strokes : 0.5

Check tolerance
cm3/1000S. : 2.5
Shutoff solenoid
Volt : 12
Rated speed rpm : 600
Del. quantity
cm3/1000 strokes : 10.0
Tolerance
cm3/1000 strokes : 0.5
Check tolerance
cm3/1000S. : 2.5
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 32.0
Tolerance
cm3/1000 strokes : 6.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 275
Del. quantity
cm3/1000 strokes : 65.0
Tolerance
cm3/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : ±0,1
Dimension KF mm : 6,0
Tolerance mm : ±0,2
Dimension MS mm : 1,8
Tolerance mm : ±0,2

POTENTIOMETER**SET**

1. measurement
voltage Volt : 1 = 3,4 V
2. measurement
voltage Volt : 2 = 1,7 V

MICROSWITCH**SET**

mm : 1=ARF 12,0
: 2=ARF 12,0

**CONTROL LEVER POSITION
SET**

Control lever
position YA mm : 38,0..42,0

Control lever
position YB mm : 57,3..66,3

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 31.10.95
Test oil : ISO 4113

Part no. : 0 460 426 242
Pump designation : VE6/12F1350R623

Customer-spec. information

Customer : IVECO-FIAT
Motor : 8060.458.5100
Power KW : 130.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return
temperature °C : 55
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 027

Opening pressure
bar : 250
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1000
Aneroid pressure hPa : 1000
Setting mm : 2.0
Tolerance mm : 0.1
Shutoff solenoid Volt : 24
KSB/AFB Volt : 24

SUPPLY PUMP PRESSURE

Rated speed rpm : 1000
Aneroid pressure hPa : 1000
Setting hPa : 6.8
Tolerance hPa : 0.3
Shutoff solenoid Volt : 24
KSB/AFB Volt : 24

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 700
Aneroid pressure hPa : 1000
Del. quantity cm³/1000 strokes : 79.0
Tolerance cm³/1000 strokes : 0.5
Spread cm³/1000 strokes : 3.5
Check tolerance cm³/1000s. : 5.0
Shutoff solenoid Volt : 24
KSB/AFB Volt : 24

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 500
Del. quantity cm³/1000 strokes : 58.5
Tolerance cm³/1000 strokes : 0.5
Shutoff solenoid Volt : 24
Check tolerance cm³/1000s. : 5.0
KSB/AFB Volt : 24

IDLE SETTING

Rated speed rpm	:	350	Aneroid pressure		
Del. quantity			hPa	:	1000
cm ³ /1000 strokes	:	16.0	SV travel mm	:	0.8
Tolerance			Tolerance mm	:	0.3
cm ³ /1000 strokes	:	2.0	Check		
Shutoff solenoid			tolerance mm	:	0.7
Volt	:	24	Shutoff solenoid		
Spread			Volt	:	24
cm ³ /1000 strokes	:	5.0	KSB/AFB Volt	:	24
Check tolerance			Setting point KSB		
cm ³ /1000S.	:	5.0	Rated speed rpm	:	340
KSB/AFB Volt	:	24	Aneroid pressure		
FULL-LOAD SPEED REGULATION					
Rated speed rpm	:	1500	hPa	:	1000
Pressure hPa	:	1000	SV travel mm	:	2.0
Del. quantity			Tolerance mm	:	0.2
cm ³ /1000 strokes	:	40.0	Check		
Tolerance			tolerance mm	:	1.2
cm ³ /1000 strokes	:	3.0	Shutoff solenoid		
Shutoff solenoid			Volt	:	24
Volt	:	24	Rated speed rpm	:	470
KSB/AFB Volt	:	24	Aneroid pressure		
STARTING FUEL DELIVERY					
Rated speed rpm	:	100	hPa	:	1000
Del. quantity			SV travel mm	:	3.2
cm ³ /1000 strokes	:	85.0	Tolerance mm	:	0.6
Tolerance			Check		
cm ³ /1000 strokes	:	25.0	tolerance mm	:	0.7
Shutoff solenoid			Shutoff solenoid		
Volt	:	24	Volt	:	24
KSB/AFB Volt	:	24	SUPPLY PUMP PRESSURE CHARACTERISTIC		
<hr/>					
INJECTION-PUMP TEST SPECIFICATIONS					
TIMING DEVICE CHARACTERISTIC					
Rated speed rpm	:	1100	Rated speed rpm	:	600
Aneroid pressure			Aneroid pressure		
hPa	:	1000	hPa	:	1000
Tolerance mm	:	0.3	Supply pump		
Check			pressure bar	:	4.4
tolerance mm	:	0.7	Tolerance hPa	:	0.3
Shutoff solenoid			Shutoff solenoid		
Volt	:	24	Volt	:	24
KSB/AFB Volt	:	24	KSB/AFB Volt	:	24
Rated speed rpm	:	900	Rated speed rpm	:	470

Aneroid pressure hPa	:	1000	Del. quantity cm ³ /1000 strokes	:	58.0
Supply pump pressure bar	:	7.8	Tolerance cm ³ /1000 strokes	:	8.0
Tolerance hPa	:	0.8	Check tolerance cm ³ /1000S.	:	10.0
Shutoff solenoid Volt	:	24	Shutoff solenoid Volt	:	24
OVERFLOW QUANTITY			KSB/AFB Volt	:	24
Rated speed rpm	:	1350	Rated speed rpm	:	1600
Aneroid pressure hPa	:	1000	Aneroid pressure hPa	:	1000
Overflow quantity ccm/10s	:	83.3	Del. quantity cm ³ /1000 strokes	:	1.5
Tolerance ccm/10s	:	27.7	Tolerance cm ³ /1000 strokes	:	1.5
Check tolerance ccm/10s	:	27.7	Check tolerance cm ³ /1000S.	:	1.5
Shutoff solenoid Volt	:	24	Shutoff solenoid Volt	:	24
KSB/AFB Volt	:	24	KSB/AFB Volt	:	24
Rated speed rpm	:	600	Rated speed rpm	:	600
Aneroid pressure hPa	:	1000	Aneroid pressure hPa	:	350
Overflow quantity ccm/10s	:	63.8	Del. quantity cm ³ /1000 strokes	:	68.5
Tolerance ccm/10s	:	22.2	Tolerance cm ³ /1000 strokes	:	0.5
Check tolerance ccm/10s	:	22.2	Check tolerance cm ³ /1000S.	:	4.0
Shutoff solenoid Volt	:	24	Shutoff solenoid Volt	:	24
KSB/AFB Volt	:	24	KSB/AFB Volt	:	24
DELIVERY AND BREAKAWAY CHARACTERISTIC			Rated speed rpm	:	1350
Rated speed rpm	:	1500	Aneroid pressure hPa	:	1000
Aneroid pressure hPa	:	1000	Del. quantity cm ³ /1000 strokes	:	73.0
Del. quantity cm ³ /1000 strokes	:	40.0	Tolerance cm ³ /1000 strokes	:	1.5
Tolerance cm ³ /1000 strokes	:	3.0	Check tolerance cm ³ /1000S.	:	3.5
Check tolerance cm ³ /1000S.	:	6.0	Shutoff solenoid Volt	:	24
Shutoff solenoid Volt	:	24	KSB/AFB Volt	:	24
KSB/AFB Volt	:	24	Rated speed rpm	:	1000
Rated speed rpm	:	1450	Aneroid pressure hPa	:	1000
Aneroid pressure hPa	:	1000	Del. quantity cm ³ /1000 strokes	:	76.5
			Tolerance cm ³ /1000 strokes	:	2.0

Check tolerance		Del. quantity
cm3/1000S.	: 3.5	cm3/1000 strokes : 1.5
Shutoff solenoid		Tolerance
Volt	: 24	cm3/1000 strokes : 1.5
KSB/AFB Volt	: 24	Check tolerance
Rated speed rpm	: 600	cm3/1000S. : 1.5
Aneroid pressure		IDLE DELIVERY
hPa	: 1000	Rated speed rpm : 425
Del. quantity		Del. quantity
cm3/1000 strokes	: 82.0	cm3/1000 strokes : 1.5
Tolerance		Tolerance
cm3/1000 strokes	: 2.0	cm3/1000 strokes : 1.5
Check tolerance		Check tolerance
cm3/1000S.	: 3.5	cm3/1000S. : 1.5
Shutoff solenoid		Shutoff solenoid
Volt	: 24	Volt : 24
KSB/AFB Volt	: 24	KSB/AFB Volt : 24
Rated speed rpm	: 700	
Aneroid pressure		
hPa	: 1000	
Del. quantity		START TRANSITION
cm3/1000 strokes	: 79.0	Rated speed rpm : 250
Tolerance		Del. quantity
cm3/1000 strokes	: 0.5	cm3/1000 strokes : 50.0
Check tolerance		Tolerance
cm3/1000S.	: 3.5	cm3/1000 strokes : 17.0
Shutoff solenoid		Shutoff solenoid
Volt	: 24	Volt : 24

MECHANICAL SHUTOFF

Rated speed rpm	: 1350	Rated speed rpm	: 130
Aneroid pressure		Del. quantity	
hPa	: 1000	cm3/1000 strokes	: 85.0
Del. quantity		Tolerance	
cm3/1000 strokes	: 1.5	cm3/1000 strokes	: 25.0
Tolerance		Shutoff solenoid	
cm3/1000 strokes	: 1.5	Volt	: 24
Spread		KSB/AFB Volt	: 24
cm3/1000 strokes	: 5.0	Rated speed rpm	
Check tolerance		Del. quantity	
cm3/1000S.	: 1.5	cm3/1000 strokes	: 25.0
Spread		Tolerance	
cm3/1000 strokes	: 5.0	cm3/1000 strokes	: 1.6
Shutoff solenoid		Shutoff solenoid	
Volt	: 24	Volt	: 24
KSB/AFB Volt	: 24	KSB/AFB Volt	: 24

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 350

Dimension K mm	: 3,6
Tolerance mm	: +0,1
Dimension KF mm	: 6,4
Tolerance mm	: +0,2
MS1 dimension mm	: 1,6
Tolerance mm	: +0,15/-0,1

CONTROL LEVER POSITION
SET

Control lever
position YA mm : 37,9..39,9

Control lever
position YB mm : 43,1..48,3

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.03.96
Test oil : ISO 4113

Part no. : 0 460 424 117
Pump designation : VE4/12F1200R636

Customer-spec. information

Customer : MAN
Motor : D 0824 LFL 01
Power KW : 114.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 110

Opening pressure
bar : 250
Tolerance bar : 3

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 840

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 850
Aneroid pressure hPa : 1500

Setting mm : 2.2
Tolerance mm : 0.2

KSBAFB V_{-1} : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 850
Aneroid pressure hPa : 1500

Setting hPa : 6.7
Tolerance hPa : 0.3

KSBAFB Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1000
Aneroid pressure hPa : 1500

Del. quantity cm³/1000 strokes : 108.0
Tolerance cm³/1000 strokes : 0.5
Spread cm³/1000 strokes : 4.0
Check tolerance cm³/1000S. : 4.5

KSBAFB Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 550
Del. quantity cm³/1000 strokes : 61.0
Tolerance cm³/1000 strokes : 0.5
Check tolerance cm³/1000S. : 4.5

KSBAFB Volt : 12

IDLE SETTING

Rated speed rpm : 400
Del. quantity cm³/1000 strokes : 14.5
Tolerance cm³/1000 strokes : 2.0
Spread cm³/1000 strokes : 6.0

Check tolerance cm ³ /1000s. : 6.5	Aneroid pressure hPa : 1500	
KSB/AFB Volt : 12	SV travel mm : 4.9 Tolerance mm : 0.4 Check tolerance mm : 0.4	
FULL-LOAD SPEED REGULATION		
Rated speed rpm : 1300	KSB/AFB Volt : 12	
Pressure hPa : 1500	SUPPLY PUMP PRESSURE CHARACTERISTIC	
Del. quantity cm ³ /1000 strokes : 75.0	Rated speed rpm : 1200	
Tolerance cm ³ /1000 strokes : 3.0	Aneroid pressure hPa : 1500	
KSB/AFB Volt : 12	Supply pump pressure bar : 8.6 Tolerance hPa : 0.3	
SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP		
Rated speed rpm : 100	KSB/AFB Volt : 12	
Del. quantity cm ³ /1000 strokes : 135.0	Rated speed rpm : 550	
Tolerance cm ³ /1000 strokes : 1.0	Aneroid pressure hPa : 1500	
KSB/AFB Volt : 12	Supply pump pressure bar : 5.2 Tolerance hPa : 0.3	
INJECTION-PUMP TEST SPECIFICATIONS		
TIMING DEVICE CHARACTERISTIC		
Rated speed rpm : 1000	Rated speed rpm : 550	
Aneroid pressure hPa : 1500	Overflow quantity ccm/10s : 63.8	
SV travel mm : 4.0	Tolerance ccm/10s : 22.2	
Tolerance mm : 0.4	Check tolerance ccm/10s : 22.2	
Check tolerance mm : 0.7	KSB/AFB Volt : 12	
KSB/AFB Volt : 12	Rated speed rpm : 1200	
Rated speed rpm : 750	Aneroid pressure hPa : 1500	
Aneroid pressure hPa : 1500	Overflow quantity ccm/10s : 97.2	
SV travel mm : 1.0	Tolerance ccm/10s : 41.6	
Tolerance mm : 0.4	Check tolerance ccm/10s : 41.6	
Check tolerance mm : 0.7	KSB/AFB Volt : 12	
KSB/AFB Volt : 12	DELIVERY AND BREAKAWAY CHARACTERISTIC	
Rated speed rpm : 1200	Rated speed rpm : 1300	

Aneroid pressure hPa	:	1500	+	KSB/AFB Volt	:	12	
Del. quantity cm ³ /1000 strokes	:	75.0	+	Rated speed rpm	:	700	
Tolerance cm ³ /1000 strokes	:	3.0	+	Aneroid pressure hPa	:	1500	
KSB/AFB Volt	:	12	+	Del. quantity cm ³ /1000 strokes	:	114.0	
Rated speed rpm	:	1340	+	Tolerance cm ³ /1000 strokes	:	2.5	
Aneroid pressure hPa	:	1500	+	Check tolerance cm ³ /1000S.	:	4.0	
Del. quantity cm ³ /1000 strokes	:	12.0	+	KSB/AFB Volt	:	12	
KSB/AFB Volt	:	12	+	Rated speed rpm	:	850	
Rated speed rpm	:	1260	+	Aneroid pressure hPa	:	1500	
Aneroid pressure hPa	:	1500	+	Del. quantity cm ³ /1000 strokes	:	115.0	
Del. quantity cm ³ /1000 strokes	:	100.0	+	Tolerance cm ³ /1000 strokes	:	2.5	
Check tolerance cm ³ /1000S.	:	5.0	+	Check tolerance cm ³ /1000S.	:	4.0	
KSB/AFB Volt	:	12	+	KSB/AFB Volt	:	12	
Rated speed rpm	:	1370	+	Rated speed rpm	:	550	
Aneroid pressure hPa	:	1500	+	Aneroid pressure hPa	:	1500	
Del. quantity cm ³ /1000 strokes	:	1.5	+	Del. quantity cm ³ /1000 strokes	:	115.0	
Tolerance cm ³ /1000 strokes	:	1.5	+	Tolerance cm ³ /1000 strokes	:	4.5	
Check tolerance cm ³ /1000S.	:	1.5	+	Check tolerance cm ³ /1000S.	:	6.0	
KSB/AFB Volt	:	12	+	KSB/AFB Volt	:	12	
Rated speed rpm	:	550	+	Rated speed rpm	:	1000	
Aneroid pressure hPa	:	400	+	Aneroid pressure hPa	:	1500	
Del. quantity cm ³ /1000 strokes	:	81.0	+	Del. quantity cm ³ /1000 strokes	:	108.0	
Tolerance cm ³ /1000 strokes	:	0.5	+	Tolerance cm ³ /1000 strokes	:	0.5	
Check tolerance cm ³ /1000S.	:	3.0	+	Check tolerance cm ³ /1000S.	:	2.5	
KSB/AFB Volt	:	12	+	<hr/>			
Rated speed rpm	:	1200	+	MECHANICAL SHUTOFF			
Aneroid pressure hPa	:	1500	+	Rated speed rpm	:	1200	
Del. quantity cm ³ /1000 strokes	:	103.0	+	Aneroid pressure hPa	:	1500	
Tolerance cm ³ /1000 strokes	:	2.5	+	Del. quantity cm ³ /1000 strokes	:	1.5	
Check tolerance cm ³ /1000S.	:	4.0	+	Tolerance cm ³ /1000 strokes	:	1.5	

Spread
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 1.5
Spread
cm³/1000 strokes : 5.0
KSB/AFB Volt : 12

IDLE DELIVERY

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5
KSB/AFB Volt : 12

START TRANSITION

Rated speed rpm : 430
Del. quantity
cm³/1000 strokes : 68.0
Tolerance
cm³/1000 strokes : 20.0
KSB/AFB Volt : 12

Rated speed rpm : 330
Del. quantity
cm³/1000 strokes : 90.0
Tolerance
cm³/1000 strokes : 15.0
KSB/AFB Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,7
Tolerance mm : +0,1
Dimension KF mm : 6,4
Tolerance mm : +0,2
MS1 dimension mm : 1,5
Tolerance mm : +0,15/-0,1

CONTROL LEVER POSITION SET

Control lever position YA mm : 37,4..40,4
Control lever position YB mm : 35,4..40,6

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.03.96
Test oil : ISO 4113

Part no. : 0 460 424 123
Pump designation : VE4/12F1200R636-1

Customer-spec. information

Customer : MAN
Motor : D 0824 LFL 05
Power KW : 114.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 110

Opening pressure
bar : 250
Tolerance bar : 3

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 840

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 900
Aneroid pressure hPa : 1500
Setting mm : 2.1
Tolerance mm : 0.2
Shutoff solenoid Volt : 24

SUPPLY PUMP PRESSURE

Rated speed rpm : 900
Aneroid pressure hPa : 1500
Setting hPa : 7.3
Tolerance hPa : 0.3
Shutoff solenoid Volt : 24

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1000
Aneroid pressure hPa : 1500
Del. quantity cm³/1000 strokes : 110.0
Tolerance cm³/1000 strokes : 0.5
Spread cm³/1000 strokes : 4.0
Check tolerance cm³/1000S. : 4.5
Shutoff solenoid Volt : 24

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 550
Del. quantity cm³/1000 strokes : 62.5
Tolerance cm³/1000 strokes : 0.5
Shutoff solenoid Volt : 24
Check tolerance cm³/1000S. : 4.5

IDLE SETTING

Rated speed rpm : 400
Del. quantity cm³/1000 strokes : 14.5
Tolerance cm³/1000 strokes : 2.0
Shutoff solenoid Volt : 24

Spread
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 6.5

FULL-LOAD SPEED REGULATION

Rated speed rpm : 1340
Pressure hPa : 1500
Del. quantity
cm³/1000 strokes : 75.0
Tolerance
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 24

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 115.0
Tolerance
cm³/1000 strokes : 25.0
Shutoff solenoid
Volt : 24

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 1050
Aneroid pressure
hPa : 1500
SV travel mm : 3.7
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 24

Rated speed rpm : 800
Aneroid pressure
hPa : 1500

SV travel mm : 0.9
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 24

Rated speed rpm : 1200
Aneroid pressure
hPa : 1500

SV travel mm : 4.9
Tolerance mm : 0.4
Check
tolerance mm : 0.4
Shutoff solenoid
Volt : 24

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 1200
Aneroid pressure
hPa : 1500
Supply pump
pressure bar : 8.8
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 24

Rated speed rpm : 550
Aneroid pressure
hPa : 1500
Supply pump
pressure bar : 5.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 24

OVERFLOW QUANTITY

Rated speed rpm : 550
Overflow quantity
ccm/10s : 63.8
Tolerance
ccm/10s : 22.2

Check tolerance
ccm/10s : 22.2
Shutoff solenoid
Volt : 24

Rated speed rpm : 1200
Aneroid pressure
hPa : 1500
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6

Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 24

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 1340
Aneroid pressure
hPa : 1500

Del. quantity		Shutoff solenoid	
cm ³ /1000 strokes	: 75.0	Volt	: 24
Tolerance		Rated speed rpm	: 1200
cm ³ /1000 strokes	: 2.0	Aneroid pressure	
Shutoff solenoid		hPa	: 1500
Volt	: 24	Del. quantity	
Rated speed rpm	: 1410	cm ³ /1000 strokes	: 106.0
Aneroid pressure		Tolerance	
hPa	: 1500	cm ³ /1000 strokes	: 2.5
Del. quantity		Check tolerance	
cm ³ /1000 strokes	: 7.5	cm ³ /1000S.	: 4.0
Shutoff solenoid		Shutoff solenoid	
Volt	: 24	Volt	: 24
Rated speed rpm	: 1220	Rated speed rpm	: 700
Aneroid pressure		Aneroid pressure	
hPa	: 1500	hPa	: 1500
Del. quantity		Del. quantity	
cm ³ /1000 strokes	: 106.0	cm ³ /1000 strokes	: 116.0
Check tolerance		Tolerance	
cm ³ /1000S.	: 5.0	cm ³ /1000 strokes	: 2.5
Shutoff solenoid		Check tolerance	
Volt	: 24	cm ³ /1000S.	: 4.0
Shutoff solenoid		Shutoff solenoid	
Volt	: 24	Volt	: 24
Rated speed rpm	: 1420	Rated speed rpm	: 550
Aneroid pressure		Aneroid pressure	
hPa	: 1500	hPa	: 1500
Del. quantity		Del. quantity	
cm ³ /1000 strokes	: 1.5	cm ³ /1000 strokes	: 121.0
Tolerance		Tolerance	
cm ³ /1000 strokes	: 1.5	cm ³ /1000 strokes	: 4.5
Check tolerance		Check tolerance	
cm ³ /1000S.	: 1.5	cm ³ /1000S.	: 6.0
Shutoff solenoid		Shutoff solenoid	
Volt	: 24	Volt	: 24
Rated speed rpm	: 1380	Rated speed rpm	: 1000
Aneroid pressure		Aneroid pressure	
hPa	: 1500	hPa	: 1500
Del. quantity		Del. quantity	
cm ³ /1000 strokes	: 30.0	cm ³ /1000 strokes	: 110.0
Tolerance		Tolerance	
cm ³ /1000 strokes	: 15.0	cm ³ /1000 strokes	: 0.5
Shutoff solenoid		Check tolerance	
Volt	: 24	cm ³ /1000S.	: 2.5
Shutoff solenoid		Shutoff solenoid	
Volt	: 24	Volt	: 24
Rated speed rpm	: 550	ELECTR. SHUTOFF	
Aneroid pressure		CONTROL LEVER, IDLE STOP	
hPa	: 500	Rated speed rpm	: 400
LDA/		Del. quantity	
HBA stroke mm	: 7.8	cm ³ /1000 strokes	: 1.5
Del. quantity			
cm ³ /1000 strokes	: 99.0		
Tolerance			
cm ³ /1000 strokes	: 0.5		
Check tolerance			
cm ³ /1000S.	: 3.5		

Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5
Spread
cm3/1000 strokes : 5.0

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 400
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Spread
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 1.5
Spread
cm3/1000 strokes : 5.0

IDLE DELIVERY

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5
Shutoff solenoid
Volt : 24

START TRANSITION

Rated speed rpm : 250
Del. quantity
cm3/1000 strokes : 30.0
Tolerance
cm3/1000 strokes : 20.0
Shutoff solenoid
Volt : 24

Rated speed rpm : 150
Del. quantity
cm3/1000 strokes : 110.0
Tolerance
cm3/1000 strokes : 30.0
Shutoff solenoid
Volt : 24

ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/
HBA stroke mm : 7.8
Dimension K mm : 3,7
Tolerance mm : +0,1
Dimension KF mm : 6,4
Tolerance mm : +0,2
Dimension MS mm : 1,2
Tolerance mm : +0,2

CONTROL LEVER POSITION
SET

Control lever
spacing
XL mm : 12.60
Control lever
spacing
Xk mm : 21.00

Control lever
position YA mm : 37,4..40,4

Control lever
position YB mm : 41,9..47,1

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 31.08.95
Test oil : ISO 4113

Part no. : 0 460 424 119
Pump designation : VE4/12F1107R644

Customer-spec. information

Customer : CASE
Motor : 4 T-390/788
Power KW : 70.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 027

Opening pressure
bar : 250
Tolerance bar : 3

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 840

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 1,8
Outlet : A

Prestroke

(as of UT) mm : 0,3
Tolerance mm : +0,02
Check
tolerance mm : +0,04

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 800
Setting mm : 2.1
Tolerance mm : 0.2
Shutoff solenoid
Volt : 24

SUPPLY PUMP PRESSURE

Rated speed rpm : 800
Setting hPa : 6.9
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 24

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 900
Del. quantity
cm3/1000 strokes : 68.0
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 4.0
Shutoff solenoid
Volt : 24

IDLE SETTING

Rated speed rpm : 425
Del. quantity
cm3/1000 strokes : 9.0
Tolerance
cm3/1000 strokes : 3.0
Shutoff solenoid
Volt : 24
Spread
cm3/1000 strokes : 5.5
Check tolerance
cm3/1000S. : 7.0

FULL-LOAD SPEED REGULATION

Rated speed rpm : 1160
 Del. quantity
 cm³/1000 strokes : 42.0
 Tolerance
 cm³/1000 strokes : 3.0
 Shutoff solenoid
 Volt : 24

STARTING FUEL DELIVERY

Rated speed rpm : 100
 Del. quantity
 cm³/1000 strokes : 90.0
 Tolerance
 cm³/1000 strokes : 20.0
 Shutoff solenoid
 Volt : 24

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 1100
 SV travel mm : 3.8
 Tolerance mm : 0.4
 Check
 tolerance mm : 0.7
 Shutoff solenoid
 Volt : 24

Rated speed rpm : 500
 SV travel mm : 0.5
 Tolerance mm : 0.4
 Check
 tolerance mm : 0.7
 Shutoff solenoid
 Volt : 24

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 1100
 Supply pump
 pressure bar : 8.2
 Tolerance hPa : 0.3
 Shutoff solenoid
 Volt : 24

Rated speed rpm : 500
 Supply pump
 pressure bar : 5.6
 Tolerance hPa : 0.3
 Shutoff solenoid
 Volt : 24

OVERFLOW QUANTITY

Rated speed rpm : 1100
 Overflow quantity
 ccm/10s : 83.3
 Tolerance
 ccm/10s : 27.7

Check tolerance
 ccm/10s : 27.7
 Shutoff solenoid
 Volt : 24

Rated speed rpm : 500
 Overflow quantity
 ccm/10s : 63.8
 Tolerance
 ccm/10s : 22.2

Check tolerance
 ccm/10s : 22.2
 Shutoff solenoid
 Volt : 24

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 1160
 Del. quantity
 cm³/1000 strokes : 42.0
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 6.0
 Shutoff solenoid
 Volt : 24

Rated speed rpm : 1200
 Del. quantity
 cm³/1000 strokes : 32.5
 Check tolerance
 cm³/1000S. : 8.0
 Shutoff solenoid
 Volt : 24

Rated speed rpm : 1240
 Del. quantity
 cm³/1000 strokes : 1.5
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000S. : 1.5
 Shutoff solenoid
 Volt : 24

Rated speed rpm : 1100
 Del. quantity
 cm³/1000 strokes : 67.0
 Tolerance
 cm³/1000 strokes : 1.5

Check tolerance		Check tolerance	
cm3/1000s.	: 3.0	cm3/1000s.	: 1.5
Shutoff solenoid		Spread	
Volt	: 24	cm3/1000 strokes	: 5.0
Rated speed rpm	: 750	IDLE DELIVERY	
Del. quantity		Rated speed rpm	: 500
cm3/1000 strokes	: 70.0	Del. quantity	
Tolerance		cm3/1000 strokes	: 2.0
cm3/1000 strokes	: 2.0	Tolerance	
Check tolerance		cm3/1000 strokes	: 2.0
cm3/1000s.	: 4.0	Check tolerance	
Shutoff solenoid		cm3/1000s.	: 2.0
Volt	: 24	Shutoff solenoid	
		Volt	: 24
Rated speed rpm	: 500		
Del. quantity		Rated speed rpm	: 350
cm3/1000 strokes	: 32.0	Del. quantity	
Tolerance		cm3/1000 strokes	: 18.0
cm3/1000 strokes	: 4.0	Tolerance	
Check tolerance		cm3/1000 strokes	: 8.0
cm3/1000s.	: 6.0	Shutoff solenoid	
Shutoff solenoid		Volt	: 24
Volt	: 24		
		Rated speed rpm	: 375
Rated speed rpm	: 900	Del. quantity	
Del. quantity		cm3/1000 strokes	: 15.0
cm3/1000 strokes	: 68.0	Tolerance	
Tolerance		cm3/1000 strokes	: 8.0
cm3/1000 strokes	: 0.5	Shutoff solenoid	
Check tolerance		Volt	: 24
cm3/1000s.	: 3.0		
Shutoff solenoid		Rated speed rpm	: 400
Volt	: 24	Del. quantity	
		cm3/1000 strokes	: 12.0
ELECTR. SHUTOFF		Tolerance	
CONTROL LEVER, IDLE STOP		cm3/1000 strokes	: 6.0
Shutoff solenoid		Volt	: 24
Volt			
		START TRANSITION	
Rated speed rpm	: 500	Rated speed rpm	: 300
Del. quantity		Del. quantity	
cm3/1000 strokes	: 1.5	cm3/1000 strokes	: 72.0
Tolerance		Tolerance	
cm3/1000 strokes	: 1.5	cm3/1000 strokes	: 8.0
Check tolerance		Shutoff solenoid	
cm3/1000s.	: 1.5	Volt	: 24
Spread			
cm3/1000 strokes	: 5.0	Rated speed rpm	: 130
		Del. quantity	
FULL-LOAD STOP CONTROL LEVER		cm3/1000 strokes	: 98.0
Rated speed rpm	: 500		
Del. quantity			
cm3/1000 strokes	: 1.5		
Tolerance			
cm3/1000 strokes	: 1.5		
Spread			
cm3/1000 strokes	: 5.0		

Tolerance
cm³/1000 strokes : 25.0
Shutoff solenoid
Volt : 24

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension KF mm : 5,2
Tolerance mm : +0,2
MS1 dimension mm : 1,5
Tolerance mm : +0,15/-0,1

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.06.95
Test oil : ISO 4113

Part no. : 0 460 484 103
Pump designation : VE4/8F2300R652

Customer-spec. information

Customer : RENAULT
Motor : F8Q - 646
Power KW : 45.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250
Setting mm : 3.7
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Setting hPa : 5.4
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 31.5
Tolerance
cm³/1000 strokes : 0.5
Spread
cm³/1000 strokes : 2.5
Shutoff solenoid
Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 3.0
Tolerance
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2450
Del. quantity
cm³/1000 strokes : 24.5
Tolerance
cm³/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 55.0
Tolerance
cm³/1000 strokes : 15.0

Shutoff solenoid	:	12	SUPPLY PUMP PRESSURE CHARACTERISTIC
			Rated speed rpm : 2000
LOAD-DEPENDENT START OF DELIVERY			Supply pump
SETTING			pressure bar : 7.5
DELIVERY DIFFERENCE			Tolerance hPa : 0.3
			Shutoff solenoid
Rated speed rpm	:	1250	Volt : 12
Del. quantity			
cm ³ /1000 strokes	:	-7.0	Rated speed rpm : 600
Tolerance			Supply pump
cm ³ /1000 strokes	:	1.0	pressure bar : 3.6
Shutoff solenoid			Tolerance hPa : 0.3
Volt	:	12	Shutoff solenoid
			Volt : 12
PRESSURE DIFFERENCE			OVERFLOW QUANTITY
Rated speed rpm	:	1250	Rated speed rpm : 2250
Del. quantity			Overflow quantity
cm ³ /1000 strokes	:	-0.2	ccm/10s : 97.2
Tolerance			Tolerance
cm ³ /1000 strokes	:	0.1	ccm/10s : 41.6
Shutoff solenoid			
Volt	:	12	Check tolerance
			ccm/10s : 41.6
TIMING-DEVICE TRAVEL DIFFERENCE			Shutoff solenoid
			Volt : 12
Rated speed rpm	:	1250	
Del. quantity			Rated speed rpm : 600
cm ³ /1000 strokes	:	-0.7	Overflow quantity
Tolerance			ccm/10s : 63.8
cm ³ /1000 strokes	:	0.1	Tolerance
Shutoff solenoid			ccm/10s : 22.2
Volt	:	12	
			Check tolerance
INJECTION-PUMP TEST SPECIFICATIONS			ccm/10s : 22.2
			Shutoff solenoid
TIMING DEVICE CHARACTERISTIC			Volt : 12
Rated speed rpm	:	2000	DELIVERY AND BREAKAWAY CHARACTERISTIC
SV travel mm	:	6.1	Rated speed rpm : 2450
Tolerance mm	:	0.4	Del. quantity
Check			cm ³ /1000 strokes : 24.5
tolerance mm	:	0.6	Tolerance
Shutoff solenoid			cm ³ /1000 strokes : 3.0
Volt	:	12	Check tolerance
			cm ³ /1000S. : 4.0
Rated speed rpm	:	600	Shutoff solenoid
			Volt : 12
SV travel mm	:	1.2	
Tolerance mm	:	0.4	Rated speed rpm : 2650
Check			Del. quantity
tolerance mm	:	0.6	cm ³ /1000 strokes : 9.5
Shutoff solenoid			Check tolerance
Volt	:	12	cm ³ /1000S. : 5.0

Rated speed rpm	:	2950
Del. quantity		
cm3/1000 strokes	:	2.5
Tolerance		
cm3/1000 strokes	:	2.5
Check tolerance		
cm3/1000S.	:	2.5
Shutoff solenoid		
Volt	:	12
Rated speed rpm	:	2250
Del. quantity		
cm3/1000 strokes	:	32.1
Tolerance		
cm3/1000 strokes	:	1.0
Check tolerance		
cm3/1000S.	:	2.3
Shutoff solenoid		
Volt	:	12
Rated speed rpm	:	1625
Del. quantity		
cm3/1000 strokes	:	31.0
Tolerance		
cm3/1000 strokes	:	1.5
Check tolerance		
cm3/1000S.	:	2.3
Shutoff solenoid		
Volt	:	12
Rated speed rpm	:	2000
Del. quantity		
cm3/1000 strokes	:	32.5
Tolerance		
cm3/1000 strokes	:	1.0
Check tolerance		
cm3/1000S.	:	2.3
Shutoff solenoid		
Volt	:	12
Rated speed rpm	:	600
Del. quantity		
cm3/1000 strokes	:	31.9
Tolerance		
cm3/1000 strokes	:	1.5
Check tolerance		
cm3/1000S.	:	2.3
Shutoff solenoid		
Volt	:	12
Rated speed rpm	:	1250
Del. quantity		
cm3/1000 strokes	:	31.5
Tolerance		
cm3/1000 strokes	:	0.5
Check tolerance		
cm3/1000S.	:	2.3
Shutoff solenoid		
Volt	:	12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm	:	410
Del. quantity		
cm3/1000 strokes	:	1.5
Tolerance		
cm3/1000 strokes	:	1.5
Check tolerance		
cm3/1000S.	:	1.5
Spread		
cm3/1000 strokes	:	5.0

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm	:	410
Del. quantity		
cm3/1000 strokes	:	1.5
Tolerance		
cm3/1000 strokes	:	1.5
Spread		
cm3/1000 strokes	:	5.0
Check tolerance		
cm3/1000S.	:	1.5
Spread		
cm3/1000 strokes	:	5.0

CHECKING LOAD-DEPENDENT START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm	:	1250
Del. quantity		
cm3/1000 strokes	:	-9.5
Tolerance		
cm3/1000 strokes	:	3.0
Check tolerance		
cm3/1000S.	:	3.0
Shutoff solenoid		
Volt	:	12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm	:	1250
Del. quantity		
cm3/1000 strokes	:	-0.7
Tolerance		
cm3/1000 strokes	:	0.1
Check tolerance		
cm3/1000S.	:	0.1

Shutoff solenoid
Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 5.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Tolerance mm : 0.2
Check
tolerance mm : 0.3
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 310
Del. quantity
cm³/1000 strokes : 35.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 210
Del. quantity
cm³/1000 strokes : 60.0
Tolerance
cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : +0,1
Dimension KF mm : 5,4
Tolerance mm : +0,2
Dimension MS mm : 1,3
Tolerance mm : +0,2

MICROSWITCH
SET

mm : 0,8..3,0
: 16,2..17,0

CONTROL LEVER POSITION
SET

Control lever
position YA mm : 30,3..34,3

Control lever
position YB mm : 64,1..76,4

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.06.95
Test oil : ISO 4113

Part no. : 0 460 484 104
Pump designation : VE4/8F2300R652-1

Customer-spec. information

Customer : RENAULT
Motor : F8Q - 646
Power KW : 45.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test Lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 1,0
Outlet : A

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250
Setting mm : 3.7
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Setting hPa : 5.4
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 31.5
Tolerance
cm³/1000 strokes : 0.5
Spread
cm³/1000 strokes : 2.5
Shutoff solenoid
Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 3.0
Tolerance
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2450
Del. quantity
cm³/1000 strokes : 24.5
Tolerance
cm³/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
 Del. quantity
 cm³/1000 strokes : 55.0
 Tolerance
 cm³/1000 strokes : 15.0
 Shutoff solenoid
 Volt : 12

SV travel mm : 1.2
 Tolerance mm : 0.4
 Check
 tolerance mm : 0.6
 Shutoff solenoid
 Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

LOAD-DEPENDENT START OF DELIVERY SETTING

Rated speed rpm : 2000
 Supply pump
 pressure bar : 7.5
 Tolerance hPa : 0.3
 Shutoff solenoid
 Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 600
 Supply pump
 pressure bar : 3.6
 Tolerance hPa : 0.3
 Shutoff solenoid
 Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 2250
 Overflow quantity
 ccm/10s : 97.2
 Tolerance
 ccm/10s : 41.6
 Check tolerance
 ccm/10s : 41.6
 Shutoff solenoid
 Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 600
 Overflow quantity
 ccm/10s : 63.8
 Tolerance
 ccm/10s : 22.2
 Check tolerance
 ccm/10s : 22.2
 Shutoff solenoid
 Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2000
 SV travel mm : 6.1
 Tolerance mm : 0.4
 Check
 tolerance mm : 0.6
 Shutoff solenoid
 Volt : 12
 Rated speed rpm : 600

Rated speed rpm : 2450
 Del. quantity
 cm³/1000 strokes : 24.5
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000s : 4.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -0.7
Tolerance
cm³/1000 strokes : 0.1
Check tolerance
cm³/1000S. : 0.1
Shutoff solenoid
Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 5.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Tolerance mm : 0.2
Check
tolerance mm : 0.3
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 310
Del. quantity
cm³/1000 strokes : 35.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 210
Del. quantity
cm³/1000 strokes : 60.0
Tolerance
cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : ±0,1
Dimension KF mm : 5,4
Tolerance mm : ±0,2
Dimension MS mm : 1,3
Tolerance mm : ±0,2

CONTROL LEVER POSITION
SET

Control lever
position YA mm : 30,3..34,2

Control lever
position YB mm : 64,1..76,9

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.10.95
Test oil : ISO 4113

Part no. : 0 460 426 229
Pump designation : VE6/12F1350R674

Customer-spec. information

Customer : IVECO-FIAT
Motor : 8060.45.5000
Power KW : 105.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return
temperature °C : 55
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 027

Opening pressure
bar : 250
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1000
Aneroid pressure hPa : 1000
Setting mm : 1.4
Tolerance mm : 0.1
Shutoff solenoid Volt : 24
KSB/AFB Volt : 24

SUPPLY PUMP PRESSURE

Rated speed rpm : 1000
Aneroid pressure hPa : 1000
Setting hPa : 6.8
Tolerance hPa : 0.3
Shutoff solenoid Volt : 24
KSB/AFB Volt : 24

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 650
Aneroid pressure hPa : 1000
Del. quantity cm³/1000 strokes : 62.5
Tolerance cm³/1000 strokes : 0.5
Spread cm³/1000 strokes : 3.5
Check tolerance cm³/1000S. : 5.0
Shutoff solenoid Volt : 24
KSB/AFB Volt : 24

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Check tolerance cm³/1000S. : 5.0

IDLE SETTING

Rated speed rpm : 350
Del. quantity cm³/1000 strokes : 16.5
Tolerance cm³/1000 strokes : 2.0
Shutoff solenoid Volt : 24
Spread cm³/1000 strokes : 4.0

Check tolerance cm ³ /1000s.	:	5.0	Setting point KSB Rated speed rpm	:	340			
KSB/AFB Volt	:	24	Aneroid pressure hPa	:	1000			
FULL-LOAD SPEED REGULATION								
Rated speed rpm	:	1550	SV travel mm	:	2.0			
Pressure hPa	:	1000	Tolerance mm	:	0.2			
Del. quantity cm ³ /1000 strokes	:	14.0	Check tolerance mm	:	0.5			
Tolerance cm ³ /1000 strokes	:	2.0	Shutoff solenoid Volt	:	24			
Shutoff solenoid Volt	:	24	Rated speed rpm	:	470			
KSB/AFB Volt	:	24	Aneroid pressure hPa	:	1000			
STARTING FUEL DELIVERY								
Rated speed rpm	:	100	SV travel mm	:	3.2			
Del. quantity cm ³ /1000 strokes	:	58.0	Tolerance mm	:	0.6			
Tolerance cm ³ /1000 strokes	:	25.0	Check tolerance mm	:	0.7			
Shutoff solenoid Volt	:	24	Shutoff solenoid Volt	:	24			
KSB/AFB Volt	:	24	SUPPLY PUMP PRESSURE CHARACTERISTIC					
<hr/>								
INJECTION-PUMP TEST SPECIFICATIONS								
TIMING DEVICE CHARACTERISTIC								
Rated speed rpm	:	1100	Rated speed rpm	:	500			
Aneroid pressure hPa	:	1000	Aneroid pressure hPa	:	1000			
Tolerance mm	:	0.3	Supply pump pressure bar	:	3.7			
Check tolerance mm	:	0.7	Tolerance hPa	:	0.3			
Shutoff solenoid Volt	:	24	Shutoff solenoid Volt	:	24			
KSB/AFB Volt	:	24	KSB/AFB Volt	:	24			
Rated speed rpm	:	1200	Rated speed rpm	:	1350			
Aneroid pressure hPa	:	1000	Aneroid pressure hPa	:	1000			
SV travel mm	:	3.3	Overflow quantity ccm/10s	:	97.2			
Tolerance mm	:	0.3	Tolerance ccm/10s	:	41.6			
Shutoff solenoid Volt	:	24	Check tolerance ccm/10s	:	41.6			
KSB/AFB Volt	:	24						

Shutoff solenoid		Shutoff solenoid	
Volt	: 24	Volt	: 24
KSB/AFB Volt	: 24	KSB/AFB Volt	: 24
Rated speed rpm	: 500	Rated speed rpm	: 1350
Aneroid pressure		Aneroid pressure	
hPa	: 1000	hPa	: 1000
Overflow quantity		Del. quantity	
ccm/10s	: 63.8	cm ³ /1000 strokes	: 55.0
Tolerance		Tolerance	
ccm/10s	: 22.2	cm ³ /1000 strokes	: 1.5
Check tolerance		Check tolerance	
ccm/10s	: 41.6	cm ³ /1000S.	: 3.5
Shutoff solenoid		Shutoff solenoid	
Volt	: 24	Volt	: 24
KSB/AFB Volt	: 24	KSB/AFB Volt	: 24
DELIVERY AND BREAKAWAY CHARACTERISTIC			
Rated speed rpm	: 1550	Rated speed rpm	: 500
Aneroid pressure		Aneroid pressure	
hPa	: 1000	hPa	: 1000
Del. quantity		Del. quantity	
cm ³ /1000 strokes	: 14.0	cm ³ /1000 strokes	: 63.5
Tolerance		Tolerance	
cm ³ /1000 strokes	: 2.0	cm ³ /1000 strokes	: 2.0
Check tolerance		Check tolerance	
cm ³ /1000S.	: 6.0	cm ³ /1000S.	: 3.5
Shutoff solenoid		Shutoff solenoid	
Volt	: 24	Volt	: 24
KSB/AFB Volt	: 24	KSB/AFB Volt	: 24
Rated speed rpm	: 1500	Rated speed rpm	: 650
Aneroid pressure		Aneroid pressure	
hPa	: 1000	hPa	: 1000
Del. quantity		Del. quantity	
cm ³ /1000 strokes	: 39.0	cm ³ /1000 strokes	: 62.5
Tolerance		Tolerance	
cm ³ /1000 strokes	: 6.0	cm ³ /1000 strokes	: 0.5
Check tolerance		Check tolerance	
cm ³ /1000S.	: 10.0	cm ³ /1000S.	: 3.5
Shutoff solenoid		Shutoff solenoid	
Volt	: 24	Volt	: 24
KSB/AFB Volt	: 24	Rated speed rpm	: 500
Rated speed rpm	: 1600	Aneroid pressure	
Aneroid pressure		hPa	
hPa	: 1000	hPa	: 80
Del. quantity		Tolerance	
cm ³ /1000 strokes	: 1.5	cm ³ /1000 strokes	: 0.5
Tolerance		Check tolerance	
cm ³ /1000 strokes	: 1.5	cm ³ /1000S.	: 0.5
Check tolerance		Check tolerance	
cm ³ /1000S.	: 1.5	cm ³ /1000S.	: 0.5
Shutoff solenoid		Shutoff solenoid	
Volt	: 24	Volt	: 24
KSB/AFB Volt	: 24	KSB/AFB Volt	: 24
Rated speed rpm	: 500	Rated speed rpm	: 500

Aneroid pressure		Check tolerance		
hPa	:	cm ³ /1000s.	:	5.0
Del. quantity		Shutoff solenoid		
cm ³ /1000 strokes	:	Volt	:	24
Check tolerance				
cm ³ /1000s.	:			
Shutoff solenoid				
Volt	:			
KSB/AFB Volt	:			

**ELECTR. SHUTOFF
CONTROL LEVER, IDLE STOP**

Rated speed rpm	:	350
Del. quantity		
cm ³ /1000 strokes	:	1.5
Tolerance		
cm ³ /1000 strokes	:	1.5
Check tolerance		
cm ³ /1000s.	:	1.5
Spread		
cm ³ /1000 strokes	:	5.0

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm	:	350
Del. quantity		
cm ³ /1000 strokes	:	1.5
Tolerance		
cm ³ /1000 strokes	:	1.5
Spread		
cm ³ /1000 strokes	:	5.0
Check tolerance		
cm ³ /1000s.	:	1.5
Spread		
cm ³ /1000 strokes	:	5.0

IDLE DELIVERY

Rated speed rpm	:	425
Del. quantity		
cm ³ /1000 strokes	:	1.5
Tolerance		
cm ³ /1000 strokes	:	1.5
Check tolerance		
cm ³ /1000s.	:	1.5
Shutoff solenoid		
Volt	:	24

KSB/AFB Volt : 24

Rated speed rpm	:	300
Del. quantity		
cm ³ /1000 strokes	:	41.5
Tolerance		
cm ³ /1000 strokes	:	2.0

START TRANSITION

Rated speed rpm	:	230
Del. quantity		
cm ³ /1000 strokes	:	60.0
Tolerance		
cm ³ /1000 strokes	:	10.0
Shutoff solenoid		
Volt	:	24

KSB/AFB Volt	:	24
Rated speed rpm	:	140
Del. quantity		
cm ³ /1000 strokes	:	100.0
Tolerance		
cm ³ /1000 strokes	:	25.0
Shutoff solenoid		
Volt	:	24

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm	:	3,6
Tolerance mm	:	±0,1
Dimension KF mm	:	6,0
Tolerance mm	:	±0,2
MS1 dimension mm	:	1,3
Tolerance mm	:	+0,15/-0,1
KSB travel mm	:	10,0

**CONTROL LEVER POSITION
SET**

Control lever position YA mm	:	37,9..39,9
Control lever position YB mm	:	42,1..47,3

End of test-specification sheet

H07

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.09.93
Test oil : ISO 4113

Part no. : 0 460 494 079
Pump designation : VE4/9F2250R84

Customer-spec. information

Customer : PSA
Motor : XD3 505D

TEST BENCH REQUIREMENTS

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm : 4.0
Tolerance mm : 0.2

Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250

Setting hPa : 5.3
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : 38.0
Tolerance
cm³/1000 strokes : 0.5
Spread
cm³/1000 strokes : 2.5
Shutoff solenoid
Volt : 12

IDLE SETTING

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 8.0
Tolerance
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12
Spread
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000s. : 3.0

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2325
Del. quantity
cm³/1000 strokes : 28.5
Tolerance
cm³/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 60.0
Tolerance
cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

LOAD-DEPENDENT START OF DELIVERY
SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -10.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -0.2
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -1.0
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
SV travel mm : 8.6
Tolerance mm : 0.4
Check
tolerance mm : 1.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 800
SV travel mm : 1.2
Tolerance mm : 0.4
Check
tolerance mm : 1.0
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2000

Supply pump
pressure bar : 7.2
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 700
Supply pump
pressure bar : 3.3
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2200
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6
Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Overflow quantity
ccm/10s : 62.5
Tolerance
ccm/10s : 20.8
Check tolerance
ccm/10s : 20.8
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2325
Del. quantity
cm³/1000 strokes : 28.5
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 8.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2450
Del. quantity
cm³/1000 strokes : 8.5
Check tolerance
cm³/1000S. : 8.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2550
Del. quantity
cm³/1000 strokes : 1.0

Tolerance
cm³/1000 strokes : 1.0
Check tolerance
cm³/1000S. : 2.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2200
Del. quantity
cm³/1000 strokes : 40.0
Tolerance
cm³/1000 strokes : 1.0
Check tolerance
cm³/1000S. : 4.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2000
Del. quantity
cm³/1000 strokes : 39.5
Tolerance
cm³/1000 strokes : 1.0
Check tolerance
cm³/1000S. : 4.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 37.0
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 4.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : 38.0
Tolerance
cm³/1000 strokes : 0.5
Check tolerance
cm³/1000S. : 3.5
Shutoff solenoid
Volt : 12

MECHANICAL SHUTOFF

Rated speed rpm : 2200
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5
Shutoff solenoid
Volt : 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5

IDLE DELIVERY

Rated speed rpm : 440
Del. quantity
cm³/1000 strokes : 1.0
Tolerance
cm³/1000 strokes : 1.0
Check tolerance
cm³/1000S. : 1.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 28.0
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0
Shutoff solenoid
Volt : 12

CHECKING LOAD-DEPENDENT START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -20.0
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 5.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -1.0

Tolerance
cm³/1000 strokes : 0.1
Check tolerance
cm³/1000S. : 0.1
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 450
Del. quantity
cm³/1000 strokes : 40.0
Tolerance
cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 65.0
Tolerance
cm³/1000 strokes : 20.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : K1
Tolerance mm : ±0,1
Dimension KF mm : 5,5
Tolerance mm : ±0,2
Dimension MS mm : 1,1
Tolerance mm : ±0,2
TLA travel mm : 12,7

CONTROL LEVER POSITION
SET

Control lever
position YA mm : 19,1..23,1
Control lever
position YB mm : 66,5..83,5

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.03.96
Test oil : ISO 4113

Part no. : 0 460 414 118
Pump designation : VE4/11F2250L619

Customer-spec. information

Customer : ROVER
Motor : TCi-em
Power KW : 63.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 55
Tolerance °C : 1

Overflow
restriction mm : 0.75

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 116

Opening pressure
bar : 207
Tolerance bar : 3

Test Lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 0,55
Outlet : A

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1000
Aneroid pressure hPa : 1500
Setting mm : 7.4
Tolerance mm : 0.2
Shutoff solenoid Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1000
Aneroid pressure hPa : 1500
Setting hPa : 7.0
Tolerance hPa : 0.3
Shutoff solenoid Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1250
Aneroid pressure hPa : 1500
Del. quantity cm³/1000 strokes : 60.0
Tolerance cm³/1000 strokes : 0.5
Spread cm³/1000 strokes : 3.0
Check tolerance cm³/1000s. : 4.0
Shutoff solenoid Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 700
Del. quantity cm³/1000 strokes : 42.5
Tolerance cm³/1000 strokes : 0.5
Shutoff solenoid Volt : 12
Check tolerance cm³/1000s. : 4.0

IDLE SETTING

Rated speed rpm : 375

Del. quantity cm ³ /1000 strokes	: 6.0	Aneroid pressure hPa	: 1500
Tolerance cm ³ /1000 strokes	: 2.0	Tolerance mm	: 0.4
Shutoff solenoid		Check tolerance mm	: 0.9
Volt	: 12	Shutoff solenoid Volt	: 12
Spread			
cm ³ /1000 strokes	: 4.0	Rated speed rpm	: 800
Check tolerance cm ³ /1000s.	: 4.5	Aneroid pressure hPa	: 1500
FULL-LOAD SPEED REGULATION		SV travel mm	: 6.6
Rated speed rpm	: 2580	Tolerance mm	: 0.4
Pressure hPa	: 1500	Check tolerance mm	: 0.9
Del. quantity cm ³ /1000 strokes	: 20.0	Shutoff solenoid Volt	: 12
Tolerance cm ³ /1000 strokes	: 2.0	Rated speed rpm	: 2000
Shutoff solenoid		Aneroid pressure hPa	: 1500
Volt	: 12	SV travel mm	: 0.3
STARTING FUEL DELIVERY		Tolerance mm	: 0.3
Rated speed rpm	: 100	Check tolerance mm	: 0.3
Del. quantity cm ³ /1000 strokes	: 96.0	Shutoff solenoid Volt	: 12
Tolerance cm ³ /1000 strokes	: 1.0	Timing device solenoid Volt	: 100
Shutoff solenoid			
Volt	: 12	SUPPLY PUMP PRESSURE CHARACTERISTIC	
SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP		Rated speed rpm	: 1400
Rated speed rpm	: 2000	Aneroid pressure hPa	: 1500
Tolerance cm ³ /1000 strokes	: 0.5	Supply pump pressure bar	: 7.5
Shutoff solenoid		Tolerance hPa	: 0.3
Volt	: 12	Shutoff solenoid Volt	: 12
SETTING GRAD. STARTING FUEL DELIVERY FULL-LOAD STOP CONTROL LEVER		Rated speed rpm	: 800
Rated speed rpm	: 100	Aneroid pressure hPa	: 1500
Del. quantity cm ³ /1000 strokes	: 50.0	Supply pump pressure bar	: 6.7
Tolerance cm ³ /1000 strokes	: 1.0	Tolerance hPa	: 0.3
Shutoff solenoid		Shutoff solenoid Volt	: 12
Volt	: 12	OVERFLOW QUANTITY	
INJECTION-PUMP TEST SPECIFICATIONS		Rated speed rpm	: 700
TIMING DEVICE CHARACTERISTIC		Aneroid pressure hPa	: 1500
Rated speed rpm	: 1400	Overflow quantity ccm/10s	: 97.2

Tolerance ccm/10s	:	55.5	Aneroid pressure hPa	:	500	
Check tolerance ccm/10s	:	55.5	LDA/ HBA stroke mm	:	6.6	
Shutoff solenoid Volt	:	12	Del. quantity cm ³ /1000 strokes	:	54.0	
Rated speed rpm	:	2000	Tolerance cm ³ /1000 strokes	:	0.5	
Aneroid pressure hPa	:	1500	Check tolerance cm ³ /1000S.	:	3.2	
Overflow quantity ccm/10s	:	138.8	Shutoff solenoid Volt	:	12	
Tolerance ccm/10s	:	55.5	Rated speed rpm	:	2000	
Check tolerance ccm/10s	:	55.5	Aneroid pressure hPa	:	1500	
Shutoff solenoid Volt	:	12	Del. quantity cm ³ /1000 strokes	:	60.0	
DELIVERY AND BREAKAWAY CHARACTERISTIC						
Rated speed rpm	:	2580	Tolerance cm ³ /1000 strokes	:	2.0	
Aneroid pressure hPa	:	1500	Check tolerance cm ³ /1000S.	:	3.2	
Del. quantity cm ³ /1000 strokes	:	20.0	Shutoff solenoid Volt	:	12	
Tolerance cm ³ /1000 strokes	:	2.0	Rated speed rpm	:	1000	
Check tolerance cm ³ /1000S.	:	5.0	Aneroid pressure hPa	:	1500	
Shutoff solenoid Volt	:	12	Del. quantity cm ³ /1000 strokes	:	63.0	
Rated speed rpm	:	2450	Tolerance cm ³ /1000 strokes	:	2.5	
Aneroid pressure hPa	:	1500	Check tolerance cm ³ /1000S.	:	4.0	
Del. quantity cm ³ /1000 strokes	:	46.0	Shutoff solenoid Volt	:	12	
Tolerance cm ³ /1000 strokes	:	4.0	Rated speed rpm	:	1250	
Check tolerance cm ³ /1000S.	:	6.0	Aneroid pressure hPa	:	1500	
Shutoff solenoid Volt	:	12	Del. quantity cm ³ /1000 strokes	:	60.0	
Rated speed rpm	:	2670	Tolerance cm ³ /1000 strokes	:	0.5	
Aneroid pressure hPa	:	1500	Check tolerance cm ³ /1000S.	:	2.8	
Del. quantity cm ³ /1000 strokes	:	1.5	Shutoff solenoid Volt	:	12	
Tolerance cm ³ /1000 strokes	:	1.5	<hr/>			
Check tolerance cm ³ /1000S.	:	1.5	ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP			
Shutoff solenoid Volt	:	12	Rated speed rpm	:	375	
Rated speed rpm	:	1000	Del. quantity cm ³ /1000 strokes	:	1.5	
			Tolerance cm ³ /1000 strokes	:	1.5	

Check tolerance

cm³/1000S. : 1.5

Spread

cm³/1000 strokes : 5.0

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 375

Del. quantity

cm³/1000 strokes : 1.5

Tolerance

cm³/1000 strokes : 1.5

Spread

cm³/1000 strokes : 5.0

Check tolerance

cm³/1000S. : 1.5

Spread

cm³/1000 strokes : 5.0

IDLE DELIVERY

Rated speed rpm : 480

Del. quantity

cm³/1000 strokes : 1.5

Tolerance

cm³/1000 strokes : 1.5

Check tolerance

cm³/1000S. : 1.5

Shutoff solenoid

Volt : 12

LDA/

HBA stroke mm : 6.6

Dimension K mm : 3,3

Tolerance mm : +0,1

Dimension KF mm : 6,7

Tolerance mm : +0,2

MS1 dimension mm : 1,5

Tolerance mm : +0,15/-0,1

MICROSWITCH

SET

mm : GST 76,9

CONTROL LEVER POSITION SET

Control lever position YA mm : 35,8..39,8

Control lever position YB mm : 48,1..57,9

End of test-specification sheet

START TRANSITION

Rated speed rpm : 320

Del. quantity

cm³/1000 strokes : 45.0

Tolerance

cm³/1000 strokes : 20.0

Shutoff solenoid

Volt : 12

Rated speed rpm : 180

Del. quantity

cm³/1000 strokes : 110.0

Tolerance

cm³/1000 strokes : 25.0

Shutoff solenoid

Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 26.03.96
Test oil : ISO 4113

Part no. : 0 460 414 137
Pump designation : VE4/11F1250L678

Customer-spec. information

Customer : IVECO-FIAT
Motor : 8045.25K.214
Power KW : 69.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 027

Opening pressure
bar : 250
Tolerance bar : 3

Test Lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 950
Aneroid pressure hPa : 1000
Setting mm : 2.8
Tolerance mm : 0.2
Shutoff solenoid Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 950
Aneroid pressure hPa : 1000
Setting hPa : 7.3
Tolerance hPa : 0.3
Shutoff solenoid Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 750
Aneroid pressure hPa : 1000
Del. quantity cm³/1000 strokes : 74.5
Tolerance cm³/1000 strokes : 0.5
Spread cm³/1000 strokes : 3.5
Check tolerance cm³/1000S. : 4.0
Shutoff solenoid Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 500
Del. quantity cm³/1000 strokes : 52.0
Tolerance cm³/1000 strokes : 0.5
Shutoff solenoid Volt : 12
Check tolerance cm³/1000S. : 4.0

IDLE SETTING

Rated speed rpm : 335
Del. quantity cm³/1000 strokes : 9.0
Tolerance cm³/1000 strokes : 2.0
Shutoff solenoid Volt : 12

Spread cm ³ /1000 strokes	:	3.5	Supply pump pressure bar	:	8.0
Check tolerance cm ³ /1000S.	:	4.0	Tolerance hPa	:	0.3
			Shutoff solenoid		
			Volt	:	12

FULL-LOAD SPEED REGULATION

Rated speed rpm	:	1330	Rated speed rpm	:	800
Pressure hPa	:	1000	Aneroid pressure		
Del. quantity cm ³ /1000 strokes	:	56.0	hPa	:	1000
Tolerance cm ³ /1000 strokes	:	3.0	Supply pump pressure bar	:	6.4
Shutoff solenoid			Tolerance hPa	:	0.3
Volt	:	12	Shutoff solenoid		
			Volt	:	12

STARTING FUEL DELIVERY

Rated speed rpm	:	100	Rated speed rpm	:	1250
Del. quantity cm ³ /1000 strokes	:	100.0	Aneroid pressure		
Tolerance cm ³ /1000 strokes	:	20.0	hPa	:	1000
Shutoff solenoid			Overflow quantity		
Volt	:	12	ccm/10s	:	97.2

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm	:	1100	Rated speed rpm	:	350
Aneroid pressure			Aneroid pressure		
hPa	:	1000	hPa	:	1000
Tolerance mm	:	0.4	Overflow quantity		
Check			ccm/10s	:	63.8
tolerance mm	:	0.7	Tolerance		
Shutoff solenoid			ccm/10s	:	22.2
Volt	:	12	Check tolerance		

Rated speed rpm	:	800	ccm/10s	:	22.2
Aneroid pressure			Shutoff solenoid		
hPa	:	1000	Volt	:	12
SV travel mm	:	1.5	DELIVERY AND BREAKAWAY CHARACTERISTIC		
Tolerance mm	:	0.4	Rated speed rpm	:	1330
Check			Aneroid pressure		
tolerance mm	:	0.7	hPa	:	1000
Shutoff solenoid			Del. quantity		
Volt	:	12	cm ³ /1000 strokes	:	56.0

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm	:	1100	Tolerance		
Aneroid pressure			cm ³ /1000 strokes	:	3.0
hPa	:	1000	Check tolerance		

Shutoff solenoid			cm ³ /1000S.	:	8.0
Volt	:	12	Shutoff solenoid		

Volt	:	12	Rated speed rpm	:	800
			Aneroid pressure		
			hPa	:	1000
			Supply pump pressure bar	:	6.4
			Tolerance hPa	:	0.3
			Shutoff solenoid		
			Volt	:	12

OVERFLOW QUANTITY

Volt	:	12	Rated speed rpm	:	1250
			Aneroid pressure		
			hPa	:	1000
			Overflow quantity		
			ccm/10s	:	97.2
			Tolerance		
			ccm/10s	:	41.6
			Check tolerance		
			ccm/10s	:	41.6
			Shutoff solenoid		
			Volt	:	12

Volt	:	12	Rated speed rpm	:	350
			Aneroid pressure		
			hPa	:	1000
			Overflow quantity		
			ccm/10s	:	63.8
			Tolerance		
			ccm/10s	:	22.2
			Check tolerance		
			ccm/10s	:	22.2
			Shutoff solenoid		
			Volt	:	12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Volt	:	12	Rated speed rpm	:	1330
			Aneroid pressure		
			hPa	:	1000
			Del. quantity		
			cm ³ /1000 strokes	:	56.0
			Tolerance		
			cm ³ /1000 strokes	:	3.0
			Check tolerance		
			cm ³ /1000S.	:	8.0
			Shutoff solenoid		
			Volt	:	12

Volt	:	12	Rated speed rpm	:	1360
			Aneroid pressure		
			hPa	:	1000

Del. quantity		Tolerance
cm ³ /1000 strokes	: 38.0	cm ³ /1000 strokes : 0.5
Check tolerance		Check tolerance
cm ³ /1000S.	: 6.0	cm ³ /1000S. : 3.0
Shutoff solenoid		Shutoff solenoid
Volt	: 12	Volt : 12
Rated speed rpm	: 1470	
Aneroid pressure		
hPa	: 1000	
Del. quantity		ELECTR. SHUTOFF
cm ³ /1000 strokes	: 1.5	CONTROL LEVER, IDLE STOP
Tolerance		
cm ³ /1000 strokes	: 1.5	Rated speed rpm : 335
Check tolerance		Aneroid pressure
cm ³ /1000S.	: 1.5	hPa : 1000
Shutoff solenoid		Del. quantity
Volt	: 12	cm ³ /1000 strokes : 1.5
		Tolerance
Rated speed rpm	: 500	cm ³ /1000 strokes : 1.5
Aneroid pressure		Check tolerance
hPa	: 250	cm ³ /1000S. : 1.5
Del. quantity		Spread
cm ³ /1000 strokes	: 63.5	cm ³ /1000 strokes : 5.0
Tolerance		
cm ³ /1000 strokes	: 0.5	FULL-LOAD STOP CONTROL LEVER
Check tolerance		
cm ³ /1000S.	: 3.0	Rated speed rpm : 335
Shutoff solenoid		Aneroid pressure
Volt	: 12	hPa : 1000
		Del. quantity
Rated speed rpm	: 1250	cm ³ /1000 strokes : 1.5
Aneroid pressure		Tolerance
hPa	: 1000	cm ³ /1000 strokes : 1.5
Del. quantity		Spread
cm ³ /1000 strokes	: 64.5	cm ³ /1000 strokes : 5.0
Tolerance		Check tolerance
cm ³ /1000 strokes	: 1.5	cm ³ /1000S. : 1.5
Check tolerance		Spread
cm ³ /1000S.	: 3.5	cm ³ /1000 strokes : 5.0
Shutoff solenoid		
Volt	: 12	IDLE DELIVERY
Rated speed rpm	: 350	Rated speed rpm : 400
Aneroid pressure		Del. quantity
hPa	: 1000	cm ³ /1000 strokes : 1.5
Del. quantity		Tolerance
cm ³ /1000 strokes	: 78.5	cm ³ /1000 strokes : 1.5
Tolerance		Check tolerance
cm ³ /1000 strokes	: 1.5	cm ³ /1000S. : 1.5
Check tolerance		Shutoff solenoid
cm ³ /1000S.	: 3.5	Volt : 12
Shutoff solenoid		
Volt	: 12	Rated speed rpm : 250
		Del. quantity
Rated speed rpm	: 750	cm ³ /1000 strokes : 28.0
Aneroid pressure		Tolerance
hPa	: 1000	cm ³ /1000 strokes : 3.0
Del. quantity		Check tolerance
cm ³ /1000 strokes	: 74.5	cm ³ /1000S. : 5.0

Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 250
Del. quantity
cm³/1000 strokes : 58.0
Tolerance
cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 130
Del. quantity
cm³/1000 strokes : 107.0
Tolerance
cm³/1000 strokes : 25.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : ±0,1
Dimension KF mm : 6,4
Tolerance mm : ±0,2
Dimension MS mm : 1,1
Tolerance mm : ±0,2

CONTROL LEVER POSITION SET

Control lever
position YA mm : 34,9..36,9

Control lever
position YB mm : 47,9..52,5

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.04.96
Test oil : ISO 4113

Part no. : 0 460 414 116
Pump designation : VE4/11F1900R444-1

Customer-spec. information

Customer : IVECO-SOFIM
Motor : 8140.47.3700
Power KW : 85.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.75

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 027

Opening pressure
bar : 250
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS**INJECTION PUMP SETTING VALUES****TIMING DEVICE TRAVEL**

Rated speed rpm : 1200
Aneroid pressure
hPa : 1000
Setting mm : 1.8
Tolerance mm : 0.1
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1200
Aneroid pressure
hPa : 1000
Setting hPa : 6.2
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1400
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 56.0
Tolerance
cm³/1000 strokes : 0.5
Spread
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 4.5
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 27.0
Tolerance
cm³/1000 strokes : 0.5
Shutoff solenoid
Volt : 12
Check tolerance
cm³/1000S. : 4.5

IDLE SETTING

Rated speed rpm : 325
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

Spread
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 6.5

Del. quantity
cm³/1000 strokes : -0.8
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2100
Pressure hPa : 1000
Del. quantity
cm³/1000 strokes : 37.0
Tolerance
cm³/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 1600
Aneroid pressure
hPa : 1000

SV travel mm : 4.3
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 1100
Aneroid pressure
hPa : 1000

SV travel mm : 1.1
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

LOAD-DEPENDENT START OF DELIVERY SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1400
Pressure hPa : 1000
Del. quantity
cm³/1000 strokes : -26.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 1900
Aneroid pressure
hPa : 1000

SV travel mm : 4.9
Tolerance mm : 0.4
Check
tolerance mm : 0.6
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1400
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : -0.2
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 1900
Aneroid pressure
hPa : 1000
Supply pump
pressure bar : 8.7
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1400
Aneroid pressure
hPa : 1000

Rated speed rpm : 700
Aneroid pressure
hPa : 1000

Supply pump		Aneroid pressure	
pressure bar	: 4.2	hPa	: 1000
Tolerance hPa	: 0.3	Del. quantity	: 1.5
Shutoff solenoid		cm3/1000 strokes	: 1.5
Volt	: 12	Tolerance	: 1.5
OVERFLOW QUANTITY			
Rated speed rpm	: 1900	cm3/1000 strokes	: 1.5
Aneroid pressure		Check tolerance	: 1.5
hPa	: 1000	cm3/1000S.	: 1.5
Overflow quantity		Shutoff solenoid	
ccm/10s	: 152.7	Volt	: 12
Tolerance		Rated speed rpm	: 700
ccm/10s	: 27.7	Aneroid pressure	
Check tolerance		hPa	: 400
ccm/10s	: 27.7	LDA/	
Shutoff solenoid		HBA stroke mm	: 6.2
Volt	: 12	Del. quantity	
Rated speed rpm	: 700	cm3/1000 strokes	: 44.0
Aneroid pressure		Tolerance	
hPa	: 1000	cm3/1000 strokes	: 0.5
Overflow quantity		Check tolerance	
ccm/10s	: 116.6	cm3/1000S.	: 4.0
Tolerance		Shutoff solenoid	
ccm/10s	: 22.2	Volt	: 12
Check tolerance		Rated speed rpm	: 1900
ccm/10s	: 22.2	Aneroid pressure	
Shutoff solenoid		hPa	: 1000
Volt	: 12	Del. quantity	
DELIVERY AND BREAKAWAY CHARACTERISTIC			
Rated speed rpm	: 2100	cm3/1000 strokes	: 57.0
Aneroid pressure		Tolerance	
hPa	: 1000	cm3/1000 strokes	: 2.5
Del. quantity		Check tolerance	
cm3/1000 strokes	: 37.0	cm3/1000S.	: 3.5
Tolerance		Shutoff solenoid	
cm3/1000 strokes	: 3.0	Volt	: 12
Check tolerance		Rated speed rpm	: 1200
cm3/1000S.	: 4.5	Aneroid pressure	
Shutoff solenoid		hPa	: 1000
Volt	: 12	Del. quantity	
Rated speed rpm	: 2200	cm3/1000 strokes	: 55.0
Aneroid pressure		Tolerance	
hPa	: 1000	cm3/1000 strokes	: 2.5
Del. quantity		Check tolerance	
cm3/1000 strokes	: 18.0	cm3/1000S.	: 4.0
Check tolerance		Shutoff solenoid	
cm3/1000S.	: 6.0	Volt	: 12
Shutoff solenoid		Rated speed rpm	: 1750
Volt	: 12	Aneroid pressure	
Rated speed rpm	: 2290	hPa	: 1000
		Del. quantity	
		cm3/1000 strokes	: 58.0
		Tolerance	
		cm3/1000 strokes	: 2.5
		Check tolerance	
		cm3/1000S.	: 3.5

Shutoff solenoid		Del. quantity
Volt	: 12	cm ³ /1000 strokes : 1.5
Rated speed rpm	: 700	Tolerance
Aneroid pressure		cm ³ /1000 strokes : 1.5
hPa	: 1000	Check tolerance
Del. quantity		cm ³ /1000S. : 1.5
cm ³ /1000 strokes	: 57.0	Shutoff solenoid
Tolerance		Volt : 12
cm ³ /1000 strokes	: 4.5	
Check tolerance		
cm ³ /1000S.	: 5.5	
Shutoff solenoid		
Volt	: 12	
Rated speed rpm	: 1400	<hr/>
Aneroid pressure		CHECKING LOAD-DEPENDENT
hPa	: 1000	START OF DELIVERY
Del. quantity		
cm ³ /1000 strokes	: 56.0	DELIVERY DIFFERENCE
Tolerance		
cm ³ /1000 strokes	: 0.5	Rated speed rpm : 1400
Check tolerance		Aneroid pressure
cm ³ /1000S.	: 3.5	hPa : 1000
Shutoff solenoid		Del. quantity
Volt	: 12	cm ³ /1000 strokes : -28.0
<hr/>		Tolerance
ELECTR. SHUTOFF		cm ³ /1000 strokes : 3.0
CONTROL LEVER, IDLE STOP		Check tolerance
Rated speed rpm	: 325	cm ³ /1000S. : 4.0
Del. quantity		Shutoff solenoid
cm ³ /1000 strokes	: 1.5	Volt : 12
Tolerance		
cm ³ /1000 strokes	: 1.5	<hr/>
Check tolerance		TIMING-DEVICE TRAVEL DIFFERENCE
cm ³ /1000S.	: 1.5	
Spread		Rated speed rpm : 1400
cm ³ /1000 strokes	: 5.0	Aneroid pressure
<hr/>		hPa : 1000
FULL-LOAD STOP CONTROL LEVER		Del. quantity
Rated speed rpm	: 325	cm ³ /1000 strokes : -0.8
Del. quantity		Tolerance
cm ³ /1000 strokes	: 1.5	cm ³ /1000 strokes : 0.1
Tolerance		Check tolerance
cm ³ /1000 strokes	: 1.5	cm ³ /1000S. : 0.1
Spread		Shutoff solenoid
cm ³ /1000 strokes	: 5.0	Volt : 12
Check tolerance		
cm ³ /1000S.	: 1.5	<hr/>
Spread		DELIVERY DIFFERENCE
cm ³ /1000 strokes	: 5.0	
<hr/>		Rated speed rpm : 1400
IDLE DELIVERY		Aneroid pressure
Rated speed rpm	: 450	hPa : 1000
		Del. quantity
		cm ³ /1000 strokes : 1.5
		Tolerance
		cm ³ /1000 strokes : 1.5
		Check tolerance
		cm ³ /1000S. : 1.5
		Shutoff solenoid
		Volt : 12
		<hr/>
		TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1400
Aneroid pressure
hPa : 1000
Tolerance mm : 0.2
Check
tolerance mm : 0.4
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 22.0
Tolerance
cm³/1000 strokes : 8.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 200
Del. quantity
cm³/1000 strokes : 80.0
Tolerance
cm³/1000 strokes : 25.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/
HBA stroke mm : 6.2
Dimension K mm : 3,3
Tolerance mm : +0,1
Dimension KF mm : 8,4
Tolerance mm : +0,2
MS1 dimension mm : 1,6
Tolerance mm : +0,15/-0,1
KSB travel mm : 7,0

CONTROL LEVER POSITION SET

Control lever
position YA mm : 37,9..39,9

Control lever
position YB mm : 43,7..48,9

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.04.96
Test oil : ISO 4113

Part no. : 0 460 484 074
Pump designation : VE4/8F2300R598

Customer-spec. information

Customer : RENAULT
Motor : F8Q - 620
Power KW : 45.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS**INJECTION PUMP SETTING VALUES****TIMING DEVICE TRAVEL**

Rated speed rpm : 1250
Setting mm : 3.7
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Setting hPa : 5.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 31.5
Tolerance
cm³/1000 strokes : 0.5
Spread
cm³/1000 strokes : 2.5
Shutoff solenoid
Volt : 12

**HOUSING-FIXED IDLE SPRING
RESIDUAL QUANTITY SETTING**

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 3.0
Tolerance
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2450
Del. quantity
cm³/1000 strokes : 24.5
Tolerance
cm³/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 55.0
Tolerance
cm³/1000 strokes : 15.0

Shutoff solenoid
Volt : 12

LOAD-DEPENDENT START OF DELIVERY
SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -7.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -0.2
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -0.7
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
SV travel mm : 6.3
Tolerance mm : 0.4
Check
tolerance mm : 0.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 600

SV travel mm : 1.2
Tolerance mm : 0.4
Check
tolerance mm : 0.6
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2000
Supply pump
pressure bar : 7.7
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Supply pump
pressure bar : 3.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2250
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6
Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Overflow quantity
ccm/10s : 63.8
Tolerance
ccm/10s : 22.2
Check tolerance
ccm/10s : 22.2

Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2450
Del. quantity
cm³/1000 strokes : 24.5
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 4.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2650
Del. quantity
cm³/1000 strokes : 9.5
Check tolerance
cm³/1000S. : 5.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2950
Del. quantity
cm3/1000 strokes : 2.5
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 2.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 2250
Del. quantity
cm3/1000 strokes : 32.1
Tolerance
cm3/1000 strokes : 1.0
Check tolerance
cm3/1000S. : 2.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 1625
Del. quantity
cm3/1000 strokes : 31.0
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 2.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 2000
Del. quantity
cm3/1000 strokes : 32.5
Tolerance
cm3/1000 strokes : 1.0
Check tolerance
cm3/1000S. : 2.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Del. quantity
cm3/1000 strokes : 31.9
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 2.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : 31.5
Tolerance
cm3/1000 strokes : 0.5
Check tolerance
cm3/1000S. : 2.3
Shutoff solenoid
Volt : 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 410
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5
Spread
cm3/1000 strokes : 5.0

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 410
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Spread
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 1.5
Spread
cm3/1000 strokes : 5.0

CHECKING LOAD-DEPENDENT START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : -9.5
Tolerance
cm3/1000 strokes : 3.0
Check tolerance
cm3/1000S. : 3.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : -0.7
Tolerance
cm3/1000 strokes : 0.1
Check tolerance
cm3/1000S. : 0.1

Shutoff solenoid
Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 5.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Tolerance mm : 0.2
Check
tolerance mm : 0.3
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 310
Del. quantity
cm³/1000 strokes : 35.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 210
Del. quantity
cm³/1000 strokes : 60.0
Tolerance
cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : +0,1
Dimension KF mm : 5,4
Tolerance mm : +0,2
Dimension MS mm : 1,3
Tolerance mm : +0,2

MICROSWITCH SET

mm : 0,8..3,0
: 14,7..15,5

CONTROL LEVER POSITION SET

Control lever
position YA mm : 30,3..34,3

Control lever
position YB mm : 67,1..69,9

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.04.96
Test oil : ISO 4113

Part no. : 0 460 484 075
Pump designation : VE4/8F2300R598-;

Customer-spec. information

Customer : RENAULT
Motor : FSQ - 620 CA
Power KW : 45.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250
Setting mm : 3.7
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Setting hPa : 5.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 31.5
Tolerance
cm³/1000 strokes : 0.5
Spread
cm³/1000 strokes : 2.5
Shutoff solenoid
Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 3.0
Tolerance
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2450
Del. quantity
cm³/1000 strokes : 24.5
Tolerance
cm³/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 55.0
Tolerance
cm³/1000 strokes : 15.0

Shutoff solenoid
Volt : 12

LOAD-DEPENDENT START OF DELIVERY
SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -7.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -0.2
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -0.7
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
SV travel mm : 6.3
Tolerance mm : 0.4
Check
tolerance mm : 0.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
SV travel mm : 1.2
Tolerance mm : 0.4
Check
tolerance mm : 0.6
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2000
Supply pump
pressure bar : 7.7
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Supply pump
pressure bar : 3.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2250
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6
Check tolerance
ccm/10s : 41.6

Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Overflow quantity
ccm/10s : 63.8
Tolerance
ccm/10s : 22.2
Check tolerance
ccm/10s : 22.2

Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2450
Del. quantity
cm³/1000 strokes : 24.5
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 4.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2650
Del. quantity
cm³/1000 strokes : 9.5
Check tolerance
cm³/1000S. : 5.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2950
Del. quantity
cm3/1000 strokes : 2.5
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 2.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 2250
Del. quantity
cm3/1000 strokes : 32.1
Tolerance
cm3/1000 strokes : 1.0
Check tolerance
cm3/1000S. : 2.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 1625
Del. quantity
cm3/1000 strokes : 31.0
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 2.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 2000
Del. quantity
cm3/1000 strokes : 32.5
Tolerance
cm3/1000 strokes : 1.0
Check tolerance
cm3/1000S. : 2.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Del. quantity
cm3/1000 strokes : 31.9
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 2.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : 31.5
Tolerance
cm3/1000 strokes : 0.5
Check tolerance
cm3/1000S. : 2.3
Shutoff solenoid
Volt : 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 410
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5
Spread
cm3/1000 strokes : 5.0

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 410
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Spread
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 1.5
Spread
cm3/1000 strokes : 5.0

CHECKING LOAD-DEPENDENT START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : -9.5
Tolerance
cm3/1000 strokes : 3.0
Check tolerance
cm3/1000S. : 3.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : -0.7
Tolerance
cm3/1000 strokes : 0.1
Check tolerance
cm3/1000S. : 0.1

Shutoff solenoid
Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 5.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Tolerance mm : 0.2
Check
tolerance mm : 0.3
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 310
Del. quantity
cm³/1000 strokes : 35.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 210
Del. quantity
cm³/1000 strokes : 60.0
Tolerance
cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : ±0,1
Dimension KF mm : 5,4
Tolerance mm : ±0,2
Dimension MS mm : 1,3
Tolerance mm : ±0,2

MICROSWITCH SET

mm : 0,8..3,0
: 14,7..15,5

CONTROL LEVER POSITION SET

Control lever
position YA mm : 30,3..34,3

Control lever
position YB mm : 67,1..79,9

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.04.96
Test oil : ISO 4113

Part no. : 0 460 484 087
Pump designation : VE4/8F2300R598-2

Customer-spec. information

Customer : RENAULT
Motor : F8Q - 620
Power KW : 45.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS**INJECTION PUMP SETTING VALUES****TIMING DEVICE TRAVEL**

Rated speed rpm : 1250
Setting mm : 3.7
Tolerance mm : 0.2
Shutoff solenoid Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Setting hPa : 5.5
Tolerance hPa : 0.3
Shutoff solenoid Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 31.5
Tolerance
cm³/1000 strokes : 0.5
Spread
cm³/1000 strokes : 2.5
Shutoff solenoid Volt : 12

**HOUSING-FIXED IDLE SPRING
RESIDUAL QUANTITY SETTING**

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 3.0
Tolerance
cm³/1000 strokes : 2.0
Shutoff solenoid Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2450
Del. quantity
cm³/1000 strokes : 24.5
Tolerance
cm³/1000 strokes : 3.0
Shutoff solenoid Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 55.0
Tolerance
cm³/1000 strokes : 15.0

Shutoff solenoid
Volt : 12

LOAD-DEPENDENT START OF DELIVERY
SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -7.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -0.2
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -0.7
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
SV travel mm : 6.3
Tolerance mm : 0.4
Check
tolerance mm : 0.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
SV travel mm : 1.2
Tolerance mm : 0.4
Check
tolerance mm : 0.6
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2000
Supply pump
pressure bar : 7.7
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Supply pump
pressure bar : 3.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2250
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6
Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Overflow quantity
ccm/10s : 63.8
Tolerance
ccm/10s : 22.2
Check tolerance
ccm/10s : 22.2

Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2450
Del. quantity
cm³/1000 strokes : 24.5
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 4.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2650
Del. quantity
cm³/1000 strokes : 9.5
Check tolerance
cm³/1000S. : 5.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2950
Del. quantity
cm3/1000 strokes : 2.5
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 2.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 2250
Del. quantity
cm3/1000 strokes : 32.1
Tolerance
cm3/1000 strokes : 1.0
Check tolerance
cm3/1000S. : 2.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 1625
Del. quantity
cm3/1000 strokes : 31.0
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 2.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 2000
Del. quantity
cm3/1000 strokes : 32.5
Tolerance
cm3/1000 strokes : 1.0
Check tolerance
cm3/1000S. : 2.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Del. quantity
cm3/1000 strokes : 31.9
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 2.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : 31.5
Tolerance
cm3/1000 strokes : 0.5
Check tolerance
cm3/1000S. : 2.3
Shutoff solenoid
Volt : 12

ELECTR. SHUTOFF
CONTROL LEVER, IDLE STOP

Rated speed rpm : 410
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5
Spread
cm3/1000 strokes : 5.0

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 410
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Spread
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 1.5
Spread
cm3/1000 strokes : 5.0

CHECKING LOAD-DEPENDENT
START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : -9.5
Tolerance
cm3/1000 strokes : 3.0
Check tolerance
cm3/1000S. : 3.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : -0.7
Tolerance
cm3/1000 strokes : 0.1
Check tolerance
cm3/1000S. : 0.1

Shutoff solenoid
Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 5.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Tolerance mm : 0.2
Check
tolerance mm : 0.3
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 310
Del. quantity
cm³/1000 strokes : 35.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 210
Del. quantity
cm³/1000 strokes : 60.0
Tolerance
cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : +0,1
Dimension KF mm : 5,4
Tolerance mm : +0,2
Dimension MS mm : 1,3
Tolerance mm : +0,2

MICROSWITCH SET

mm : 0,8..3,0
: 14,7..15,5

CONTROL LEVER POSITION SET

Control lever
position YA mm : 30,3..34,3
Control lever
position YB mm : 67,1..79,9

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.04.96
Test oil : ISO 4113

Part no. : 0 460 484 088
Pump designation : VE4/8F2300R598-J

Customer-spec. information

Customer : RENAULT
Motor : F8Q - 620 CA
Power KW : 45.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test Lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250
Setting mm : 3.7
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Setting hPa : 5.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 31.5
Tolerance
cm³/1000 strokes : 0.5
Spread
cm³/1000 strokes : 2.5
Shutoff solenoid
Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 3.0
Tolerance
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2450
Del. quantity
cm³/1000 strokes : 24.5
Tolerance
cm³/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 55.0
Tolerance
cm³/1000 strokes : 15.0

Shutoff solenoid
Volt : 12

LOAD-DEPENDENT START OF DELIVERY
SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -7.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -0.2
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -0.7
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
SV travel mm : 6.3
Tolerance mm : 0.4
Check
tolerance mm : 0.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 600

SV travel mm : 1.2
Tolerance mm : 0.4
Check
tolerance mm : 0.6
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2000
Supply pump
pressure bar : 7.7
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Supply pump
pressure bar : 3.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2250
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6

Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Overflow quantity
ccm/10s : 63.8
Tolerance
ccm/10s : 22.2

Check tolerance
ccm/10s : 22.2
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2450
Del. quantity
cm³/1000 strokes : 24.5
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 4.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2650
Del. quantity
cm³/1000 strokes : 9.5
Check tolerance
cm³/1000S. : 5.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2950
 Del. quantity
 cm3/1000 strokes : 2.5
 Tolerance
 cm3/1000 strokes : 2.5
 Check tolerance
 cm3/1000S. : 2.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2250
 Del. quantity
 cm3/1000 strokes : 32.1
 Tolerance
 cm3/1000 strokes : 1.0
 Check tolerance
 cm3/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1625
 Del. quantity
 cm3/1000 strokes : 31.0
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2000
 Del. quantity
 cm3/1000 strokes : 32.5
 Tolerance
 cm3/1000 strokes : 1.0
 Check tolerance
 cm3/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 600
 Del. quantity
 cm3/1000 strokes : 31.9
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : 31.5
 Tolerance
 cm3/1000 strokes : 0.5
 Check tolerance
 cm3/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

ELECTR. SHUTOFF
CONTROL LEVER, IDLE STOP

Rated speed rpm : 410
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5
 Spread
 cm3/1000 strokes : 5.0

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 410
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Spread
 cm3/1000 strokes : 5.0
 Check tolerance
 cm3/1000S. : 1.5
 Spread
 cm3/1000 strokes : 5.0

CHECKING LOAD-DEPENDENT
START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : -9.5
 Tolerance
 cm3/1000 strokes : 2.0
 Check tolerance
 cm3/1000S. : 2.0
 Shutoff solenoid
 Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : -0.7
 Tolerance
 cm3/1000 strokes : 0.1
 Check tolerance
 cm3/1000S. : 0.1

Shutoff solenoid
Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity cm³/1000 strokes : 5.0
Tolerance cm³/1000 strokes : 3.0
Check tolerance cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Tolerance mm : 0.2
Check tolerance mm : 0.3
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 310
Del. quantity cm³/1000 strokes : 35.0
Tolerance cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 210
Del. quantity cm³/1000 strokes : 60.0
Tolerance cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : ±0,1
Dimension KF mm : 5,4
Tolerance mm : ±0,2
Dimension MS mm : 1,3
Tolerance mm : ±0,2

MICROSWITCH SET

mm : 0,8...3,0
: 14,7..15,5

CONTROL LEVER POSITION SET

Control lever
position YA mm : 30,3..34,3

Control lever
position YB mm : 67,1..79,9

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 16.04.96
Test oil : ISO 4113

Part no. : 0 460 484 114
Pump designation : VE4/8F2300R598-+

Customer-spec. information

Customer : RENAULT
Motor : F8Q - 620
Power KW : 45.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS**INJECTION PUMP SETTING VALUES****TIMING DEVICE TRAVEL**

Rated speed rpm : 1250
Setting mm : 3.7
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Setting hPa : 5.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 31.5
Tolerance
cm³/1000 strokes : 0.5
Spread
cm³/1000 strokes : 2.5
Shutoff solenoid
Volt : 12

**HOUSING-FIXED IDLE SPRING
RESIDUAL QUANTITY SETTING**

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 3.0
Tolerance
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2450
Del. quantity
cm³/1000 strokes : 24.5
Tolerance
cm³/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 55.0
Tolerance
cm³/1000 strokes : 15.0

Shutoff solenoid
Volt : 12

LOAD-DEPENDENT START OF DELIVERY
SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -7.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -0.2
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -0.7
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
SV travel mm : 6.3
Tolerance mm : 0.4
Check
tolerance mm : 0.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
SV travel mm : 1.2
Tolerance mm : 0.4
Check
tolerance mm : 0.6
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2000
Supply pump
pressure bar : 7.7
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Supply pump
pressure bar : 3.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2250
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6

Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Overflow quantity
ccm/10s : 63.8
Tolerance
ccm/10s : 22.2

Check tolerance
ccm/10s : 22.2
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2450
Del. quantity
cm³/1000 strokes : 24.5
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000s. : 4.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2650
Del. quantity
cm³/1000 strokes : 9.5
Check tolerance
cm³/1000s. : 5.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2950
Del. quantity
cm3/1000 strokes : 2.5
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 2.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 2250
Del. quantity
cm3/1000 strokes : 32.1
Tolerance
cm3/1000 strokes : 1.0
Check tolerance
cm3/1000S. : 2.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 1625
Del. quantity
cm3/1000 strokes : 31.0
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 2.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 2000
Del. quantity
cm3/1000 strokes : 32.5
Tolerance
cm3/1000 strokes : 1.0
Check tolerance
cm3/1000S. : 2.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Del. quantity
cm3/1000 strokes : 31.9
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 2.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : 31.5
Tolerance
cm3/1000 strokes : 0.5
Check tolerance
cm3/1000S. : 2.3
Shutoff solenoid
Volt : 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 410
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5
Spread
cm3/1000 strokes : 5.0

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 410
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Spread
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 1.5
Spread
cm3/1000 strokes : 5.0

CHECKING LOAD-DEPENDENT START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : -9.5
Tolerance
cm3/1000 strokes : 3.0
Check tolerance
cm3/1000S. : 3.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : -0.7
Tolerance
cm3/1000 strokes : 0.1
Check tolerance
cm3/1000S. : 0.1

Shutoff solenoid
Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity cm³/1000 strokes : 5.0
Tolerance cm³/1000 strokes : 3.0
Check tolerance cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Tolerance mm : 0.2
Check tolerance mm : 0.3
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 310
Del. quantity cm³/1000 strokes : 35.0
Tolerance cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 210
Del. quantity cm³/1000 strokes : 60.0
Tolerance cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : 0,1
Dimension KF mm : 5,4
Tolerance mm : +0,2
Dimension MS mm : 1,3
Tolerance mm : +0,2

MICROSWITCH
SET

mm : 0,8...3,0
: 14,7..15,5

CONTROL LEVER POSITION
SET

Control lever
position YA mm : 30,3..34,3
Control lever
position YB mm : 67,1..79,9

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.04.96
Test oil : ISO 4113

Part no. : 0 460 484 115
Pump designation : VE4/8F2300R598-5

Customer-spec. information

Customer : RENAULT
Motor : F8Q - 620 CA
Power KW : 45.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250
Setting mm : 3.7
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Setting hPa : 5.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 31.5
Tolerance
cm³/1000 strokes : 0.5
Spread
cm³/1000 strokes : 2.5
Shutoff solenoid
Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 3.0
Tolerance
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2450
Del. quantity
cm³/1000 strokes : 24.5
Tolerance
cm³/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 55.0
Tolerance
cm³/1000 strokes : 15.0

Shutoff solenoid
Volt : 12

LOAD-DEPENDENT START OF DELIVERY
SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -7.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -0.2
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -0.7
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
SV travel mm : 6.3
Tolerance mm : 0.4
Check
tolerance mm : 0.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
SV travel mm : 1.2
Tolerance mm : 0.4
Check
tolerance mm : 0.6
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2000
Supply pump
pressure bar : 7.7
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Supply pump
pressure bar : 3.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2250
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6
Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Overflow quantity
ccm/10s : 63.8
Tolerance
ccm/10s : 22.2
Check tolerance
ccm/10s : 22.2

Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2450
Del. quantity
cm³/1000 strokes : 24.5
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000s. : 4.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2650
Del. quantity
cm³/1000 strokes : 9.5
Check tolerance
cm³/1000s. : 5.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2950
 Del. quantity
 cm3/1000 strokes : 2.5
 Tolerance
 cm3/1000 strokes : 2.5
 Check tolerance
 cm3/1000S. : 2.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2250
 Del. quantity
 cm3/1000 strokes : 32.1
 Tolerance
 cm3/1000 strokes : 1.0
 Check tolerance
 cm3/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1625
 Del. quantity
 cm3/1000 strokes : 31.0
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2000
 Del. quantity
 cm3/1000 strokes : 32.5
 Tolerance
 cm3/1000 strokes : 1.0
 Check tolerance
 cm3/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 600
 Del. quantity
 cm3/1000 strokes : 31.9
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : 31.5
 Tolerance
 cm3/1000 strokes : 0.5
 Check tolerance
 cm3/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 410
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5
 Spread
 cm3/1000 strokes : 5.0

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 410
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Spread
 cm3/1000 strokes : 5.0
 Check tolerance
 cm3/1000S. : 1.5
 Spread
 cm3/1000 strokes : 5.0

CHECKING LOAD-DEPENDENT START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : -9.5
 Tolerance
 cm3/1000 strokes : 3.0
 Check tolerance
 cm3/1000S. : 3.0
 Shutoff solenoid
 Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : -0.7
 Tolerance
 cm3/1000 strokes : 0.1
 Check tolerance
 cm3/1000S. : 0.1

Shutoff solenoid
Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 5.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Tolerance mm : 0.2
Check
tolerance mm : 0.3
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 310
Del. quantity
cm³/1000 strokes : 35.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 210
Del. quantity
cm³/1000 strokes : 60.0
Tolerance
cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : ±0,1
Dimension KF mm : 5,4
Tolerance mm : ±0,2
Dimension MS mm : 1,3
Tolerance mm : ±0,2

MICROSWITCH
SET

mm : 0,8...3,0
: 14,7..15,5

CONTROL LEVER POSITION
SET

Control lever
position YA mm : 30,3..34,3
Control lever
position YB mm : 67,1..79,9

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.04.96
Test oil : ISO 4113

Part no. : 0 460 484 116
Pump designation : VE4/8F2300R598-5

Customer-spec. information
Customer : RENAULT
Motor : F8Q - 620 DDS
Power KW : 45.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250
Setting mm : 3.7
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Setting hPa : 5.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 31.5
Tolerance
cm³/1000 strokes : 0.5
Spread
cm³/1000 strokes : 2.5
Shutoff solenoid
Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 3.0
Tolerance
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2450
Del. quantity
cm³/1000 strokes : 24.5
Tolerance
cm³/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 55.0
Tolerance
cm³/1000 strokes : 15.0

Shutoff solenoid
Volt : 12

LOAD-DEPENDENT START OF DELIVERY
SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -7.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -0.2
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -0.7
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000

SV travel mm : 6.3
Tolerance mm : 0.4
Check
tolerance mm : 0.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 600

SV travel mm : 1.2
Tolerance mm : 0.4
Check
tolerance mm : 0.6
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2000
Supply pump
pressure bar : 7.7
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Supply pump
pressure bar : 3.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2250
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6
Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Overflow quantity
ccm/10s : 63.8
Tolerance
ccm/10s : 22.2
Check tolerance
ccm/10s : 22.2
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2450
Del. quantity
cm³/1000 strokes : 24.5
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 4.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2650
Del. quantity
cm³/1000 strokes : 9.5
Check tolerance
cm³/1000S. : 5.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2950
Del. quantity
cm3/1000 strokes : 2.5
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 2.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 2250
Del. quantity
cm3/1000 strokes : 32.1
Tolerance
cm3/1000 strokes : 1.0
Check tolerance
cm3/1000S. : 2.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 1625
Del. quantity
cm3/1000 strokes : 31.0
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 2.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 2000
Del. quantity
cm3/1000 strokes : 32.5
Tolerance
cm3/1000 strokes : 1.0
Check tolerance
cm3/1000S. : 2.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Del. quantity
cm3/1000 strokes : 31.9
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 2.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : 31.5
Tolerance
cm3/1000 strokes : 0.5
Check tolerance
cm3/1000S. : 2.3
Shutoff solenoid
Volt : 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 410
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5
Spread
cm3/1000 strokes : 5.0

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 410
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Spread
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 1.5
Spread
cm3/1000 strokes : 5.0

CHECKING LOAD-DEPENDENT START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : -9.5
Tolerance
cm3/1000 strokes : 3.0
Check tolerance
cm3/1000S. : 3.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : -0.7
Tolerance
cm3/1000 strokes : 0.1
Check tolerance
cm3/1000S. : 0.1

Shutoff solenoid
Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 5.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Tolerance mm : 0.2
Check
tolerance mm : 0.3
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 310
Del. quantity
cm³/1000 strokes : 35.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 210
Del. quantity
cm³/1000 strokes : 60.0
Tolerance
cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : ±0,1
Dimension KF mm : 5,4
Tolerance mm : ±0,2
Dimension MS mm : 1,3
Tolerance mm : ±0,2

MICROSWITCH SET

mm : 0,8..3,0
: 14,7..15,5

CONTROL LEVER POSITION SET

Control lever
position YA mm : 30,3..34,3
Control lever
position YB mm : 67,1..79,9

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 16.04.96
Test oil : ISO 4113

Part no. : 0 460 484 117
Pump designation : VE4/8F2300R598-7

Customer-spec. information

Customer : RENAULT
Motor : F8Q - 620 CA DDS
Power KW : 45.0

TEST BENCH REQUIREMENTS**Calibrating-oil**

return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test Lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS**INJECTION PUMP SETTING VALUES****TIMING DEVICE TRAVEL**

Rated speed rpm : 1250
Setting mm : 3.7
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Setting hPa : 5.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 31.5
Tolerance
cm³/1000 strokes : 0.5
Spread
cm³/1000 strokes : 2.5
Shutoff solenoid
Volt : 12

**HOUSING-FIXED IDLE SPRING
RESIDUAL QUANTITY SETTING**

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 3.0
Tolerance
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2450
Del. quantity
cm³/1000 strokes : 24.5
Tolerance
cm³/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 55.0
Tolerance
cm³/1000 strokes : 15.0

Shutoff solenoid
Volt : 12

LOAD-DEPENDENT START OF DELIVERY
SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -7.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -0.2
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -0.7
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

INJECTION PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
SV travel mm : 6.3
Tolerance mm : 0.4
Check
tolerance mm : 0.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
SV travel mm : 1.2
Tolerance mm : 0.4
Check
tolerance mm : 0.6
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2000
Supply pump
pressure bar : 7.7
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Supply pump
pressure bar : 3.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2250
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6

Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Overflow quantity
ccm/10s : 63.8
Tolerance
ccm/10s : 22.2

Check tolerance
ccm/10s : 22.2
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2450
Del. quantity
cm³/1000 strokes : 24.5
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 4.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2650
Del. quantity
cm³/1000 strokes : 9.5
Check tolerance
cm³/1000S. : 5.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2950
 Del. quantity
 cm³/1000 strokes : 2.5
 Tolerance
 cm³/1000 strokes : 2.5
 Check tolerance
 cm³/1000S. : 2.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2250
 Del. quantity
 cm³/1000 strokes : 32.1
 Tolerance
 cm³/1000 strokes : 1.0
 Check tolerance
 cm³/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1625
 Del. quantity
 cm³/1000 strokes : 31.0
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2000
 Del. quantity
 cm³/1000 strokes : 32.5
 Tolerance
 cm³/1000 strokes : 1.0
 Check tolerance
 cm³/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 600
 Del. quantity
 cm³/1000 strokes : 31.9
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1250
 Del. quantity
 cm³/1000 strokes : 31.5
 Tolerance
 cm³/1000 strokes : 0.5
 Check tolerance
 cm³/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 410
 Del. quantity
 cm³/1000 strokes : 1.5
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000S. : 1.5
 Spread
 cm³/1000 strokes : 5.0

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 410
 Del. quantity
 cm³/1000 strokes : 1.5
 Tolerance
 cm³/1000 strokes : 1.5
 Spread
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 1.5
 Spread
 cm³/1000 strokes : 5.0

CHECKING LOAD-DEPENDENT START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm³/1000 strokes : -9.5
 Tolerance
 cm³/1000 strokes : 2.0
 Check tolerance
 cm³/1000S. : 2.0
 Shutoff solenoid
 Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm³/1000 strokes : -0.7
 Tolerance
 cm³/1000 strokes : 0.1
 Check tolerance
 cm³/1000S. : 0.1

Shutoff solenoid
Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 5.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Tolerance mm : 0.2
Check
tolerance mm : 0.3
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 310
Del. quantity
cm³/1000 strokes : 35.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 210
Del. quantity
cm³/1000 strokes : 60.0
Tolerance
cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : ±0,1
Dimension KF mm : 5,4
Tolerance mm : ±0,2
Dimension MS mm : 1,3
Tolerance mm : ±0,2

MICROSWITCH SET

mm : 0,8..3,0
: 14,7..15,5

CONTROL LEVER POSITION SET

Control lever
position YA mm : 30,3..34,3

Control lever
position YB mm : 67,1..79,9

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.04.96
Test oil : ISO 4113

Part no. : 0 460 494 357
Pump designation : VE4/9F2400R581

Customer-spec. information

Customer : RENAULT
Motor : G8T - 752
Power KW : 59.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

K01

Plunger stroke mm : 1,0
Tolerance mm : ±0,02
Outlet : C

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250
Setting mm : 2.5
Tolerance mm : 0.2
Shutoff solenoid Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Setting hPa : 6.2
Tolerance hPa : 0.3
Shutoff solenoid Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 37.4
Tolerance
cm³/1000 strokes : 0.5
Spread
cm³/1000 strokes : 2.5
Shutoff solenoid
Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 450
Del. quantity
cm³/1000 strokes : 5.0
Tolerance
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2600
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY		Tolerance mm : 0.4	
Rated speed rpm	: 100	Check tolerance mm : 0.6	
Del. quantity cm ³ /1000 strokes	: 60.0	Shutoff solenoid Volt : 12	
Tolerance cm ³ /1000 strokes	: 15.0	Rated speed rpm : 750	
Shutoff solenoid Volt	: 12	SV travel mm : 1.0	
LOAD-DEPENDENT START OF DELIVERY SETTING		Tolerance mm : 1.2	
DELIVERY DIFFERENCE		Check tolerance mm : 1.2	
Rated speed rpm	: 1250	Shutoff solenoid Volt : 12	
Del. quantity cm ³ /1000 strokes	: -7.1	KSB/AFB Volt : 12	
Tolerance cm ³ /1000 strokes	: 1.0	SUPPLY PUMP PRESSURE CHARACTERISTIC	
Shutoff solenoid Volt	: 12	Rated speed rpm : 2000	
PRESSURE DIFFERENCE		Supply pump pressure bar : 8.2	
Rated speed rpm	: 1250	Tolerance hPa : 0.3	
Del. quantity cm ³ /1000 strokes	: -0.2	Shutoff solenoid Volt : 12	
Tolerance cm ³ /1000 strokes	: 0.1	Rated speed rpm : 750	
Shutoff solenoid Volt	: 12	Supply pump pressure bar : 4.7	
TIMING-DEVICE TRAVEL DIFFERENCE		Tolerance hPa : 0.3	
Rated speed rpm	: 1250	Shutoff solenoid Volt : 12	
Del. quantity cm ³ /1000 strokes	: -0.8	OVERFLOW QUANTITY	
Tolerance cm ³ /1000 strokes	: 0.1	Rated speed rpm : 2300	
Shutoff solenoid Volt	: 12	Overflow quantity ccm/10s : 97.2	
INJECTION-PUMP TEST SPECIFICATIONS		Tolerance ccm/10s : 41.6	
TIMING DEVICE CHARACTERISTIC		Check tolerance ccm/10s : 41.6	
Rated speed rpm	: 2000	Shutoff solenoid Volt : 12	
Tolerance mm	: 0.4	Rated speed rpm : 750	
Check tolerance mm	: 0.6	Overflow quantity ccm/10s : 63.8	
Shutoff solenoid Volt	: 12	Tolerance ccm/10s : 22.2	
Rated speed rpm	: 1000	Check tolerance ccm/10s : 22.2	
SV travel mm	: 1.0	Shutoff solenoid Volt : 12	
DELIVERY AND BREAKAWAY CHARACTERISTIC		Rated speed rpm : 2600	

Del. quantity
 cm³/1000 strokes : 23.0
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 4.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2500
 Del. quantity
 cm³/1000 strokes : 35.5
 Tolerance
 cm³/1000 strokes : 4.0
 Check tolerance
 cm³/1000S. : 5.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2800
 Del. quantity
 cm³/1000 strokes : 2.5
 Tolerance
 cm³/1000 strokes : 2.5
 Check tolerance
 cm³/1000S. : 2.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2300
 Del. quantity
 cm³/1000 strokes : 41.0
 Tolerance
 cm³/1000 strokes : 1.0
 Check tolerance
 cm³/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1000
 Del. quantity
 cm³/1000 strokes : 37.7
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2000
 Del. quantity
 cm³/1000 strokes : 40.3
 Tolerance
 cm³/1000 strokes : 1.0
 Check tolerance
 cm³/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 750

Del. quantity
 cm³/1000 strokes : 36.5
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1250
 Del. quantity
 cm³/1000 strokes : 37.4
 Tolerance
 cm³/1000 strokes : 0.5
 Check tolerance
 cm³/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 385
 Del. quantity
 cm³/1000 strokes : 1.5
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000S. : 1.5
 Spread
 cm³/1000 strokes : 5.0

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 385
 Del. quantity
 cm³/1000 strokes : 1.5
 Tolerance
 cm³/1000 strokes : 1.5
 Spread
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 1.5
 Spread
 cm³/1000 strokes : 5.0

CHECKING LOAD-DEPENDENT START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1250

Del. quantity
cm3/1000 strokes : -9.4
Tolerance
cm3/1000 strokes : 2.0
Check tolerance
cm3/1000S. : 2.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : -0.8
Tolerance
cm3/1000 strokes : 0.1
Check tolerance
cm3/1000S. : 0.1
Shutoff solenoid
Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : 5.0
Tolerance
cm3/1000 strokes : 3.0
Check tolerance
cm3/1000S. : 3.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Tolerance mm : 0.2
Check
tolerance mm : 0.3
Shutoff solenoid
Volt : 12

EXHAUST-GAS RECIRCULATION

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : 23.0
Tolerance
cm3/1000 strokes : 0.5
Check tolerance
cm3/1000S. : 2.5
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 350
Del. quantity
cm3/1000 strokes : 30.0

Tolerance
cm3/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 200
Del. quantity
cm3/1000 strokes : 70.0
Tolerance
cm3/1000 strokes : 25.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,7
Tolerance mm : ±0,1
Dimension KF mm : 6,0
Tolerance mm : ±0,2
Dimension MS mm : 0,8
Tolerance mm : ±0,2

MICROSWITCH SET

mm : 0,8...3,0
: ARF 12,0

CONTROL LEVER POSITION SET

Control lever
position YA mm : 37,2..41,2
Control lever
position YB mm : 61,3..69,7

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.04.96
Test oil : ISO 4113

Part no. : 0 460 494 358
Pump designation : VE4/9F2400R581-1

Customer-spec. information

Customer : RENAULT
Motor : G8T - 752 CA
Power KW : 59.0

TEST BENCH REQUIREMENTS

Calibrating-oil return

temperature °C : 45
Tolerance °C : 1

Overflow restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder assembly : 1 688 901 022

Opening pressure bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

K05

Plunger stroke mm : 1,0
Tolerance mm : +-0,02
Outlet : C

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250
Setting mm : 2.5
Tolerance mm : 0.2
Shutoff solenoid Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Setting hPa : 6.2
Tolerance hPa : 0.3
Shutoff solenoid Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity cm³/1000 strokes : 37.4
Tolerance cm³/1000 strokes : 0.5
Spread cm³/1000 strokes : 2.5
Shutoff solenoid Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 450
Del. quantity cm³/1000 strokes : 5.0
Tolerance cm³/1000 strokes : 2.0
Shutoff solenoid Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2600
Del. quantity cm³/1000 strokes : 23.0
Tolerance cm³/1000 strokes : 3.0
Shutoff solenoid Volt : 12

STARTING FUEL DELIVERY		Tolerance mm : 0.4	
Rated speed rpm	: 100	Check tolerance mm : 0.6	
Del. quantity cm ³ /1000 strokes	: 60.0	Shutoff solenoid Volt : 12	
Tolerance cm ³ /1000 strokes	: 15.0	Rated speed rpm : 750	
Shutoff solenoid Volt	: 12	SV travel mm : 1.0	
LOAD-DEPENDENT START OF DELIVERY SETTING		Tolerance mm : 1.2	
DELIVERY DIFFERENCE		Check tolerance mm : 1.2	
Rated speed rpm	: 1250	Shutoff solenoid Volt : 12	
Del. quantity cm ³ /1000 strokes	: -7.1	KSB/AFB Volt : 12	
Tolerance cm ³ /1000 strokes	: 1.0	SUPPLY PUMP PRESSURE CHARACTERISTIC	
Shutoff solenoid Volt	: 12	Rated speed rpm : 2000	
PRESSURE DIFFERENCE		Supply pump pressure bar : 8.2	
Rated speed rpm	: 1250	Tolerance hPa : 0.3	
Del. quantity cm ³ /1000 strokes	: -0.2	Shutoff solenoid Volt : 12	
Tolerance cm ³ /1000 strokes	: 0.1	Rated speed rpm : 750	
Shutoff solenoid Volt	: 12	Supply pump pressure bar : 4.7	
TIMING-DEVICE TRAVEL DIFFERENCE		Tolerance hPa : 0.3	
Rated speed rpm	: 1250	Shutoff solenoid Volt : 12	
Del. quantity cm ³ /1000 strokes	: -0.8	OVERFLOW QUANTITY	
Tolerance cm ³ /1000 strokes	: 0.1	Rated speed rpm : 2300	
Shutoff solenoid Volt	: 12	Overflow quantity ccm/10s : 97.2	
INJECTION-PUMP TEST SPECIFICATIONS		Tolerance ccm/10s : 41.6	
TIMING DEVICE CHARACTERISTIC		Check tolerance ccm/10s : 41.6	
Rated speed rpm	: 2000	Shutoff solenoid Volt : 12	
Tolerance mm	: 0.4	Rated speed rpm : 750	
Check tolerance mm	: 0.6	Overflow quantity ccm/10s : 63.8	
Shutoff solenoid Volt	: 12	Tolerance ccm/10s : 22.2	
Rated speed rpm	: 1000	Check tolerance ccm/10s : 22.2	
SV travel mm	: 1.0	Shutoff solenoid Volt : 12	
DELIVERY AND BREAKAWAY CHARACTERISTIC		Rated speed rpm : 2600	

Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 4.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2500
Del. quantity
cm³/1000 strokes : 35.5
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 5.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2800
Del. quantity
cm³/1000 strokes : 2.5
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 2.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 2300
Del. quantity
cm³/1000 strokes : 41.0
Tolerance
cm³/1000 strokes : 1.0
Check tolerance
cm³/1000S. : 2.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 37.7
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 2.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 2000
Del. quantity
cm³/1000 strokes : 40.3
Tolerance
cm³/1000 strokes : 1.0
Check tolerance
cm³/1000S. : 2.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 750

Del. quantity
cm³/1000 strokes : 36.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 2.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 37.4
Tolerance
cm³/1000 strokes : 0.5
Check tolerance
cm³/1000S. : 2.3
Shutoff solenoid
Volt : 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 385
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5
Spread
cm³/1000 strokes : 5.0

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 385
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Spread
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 1.5
Spread
cm³/1000 strokes : 5.0

CHECKING LOAD-DEPENDENT START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1250

Del. quantity
cm³/1000 strokes : -9.4
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 2.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -0.8
Tolerance
cm³/1000 strokes : 0.1
Check tolerance
cm³/1000S. : 0.1
Shutoff solenoid
Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 5.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Tolerance mm : 0.2
Check
tolerance mm : 0.3
Shutoff solenoid
Volt : 12

EXHAUST-GAS RECIRCULATION

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : 0.5
Check tolerance
cm³/1000S. : 2.5
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 30.0

Tolerance
cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 200
Del. quantity
cm³/1000 strokes : 70.0
Tolerance
cm³/1000 strokes : 25.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,7
Tolerance mm : ±0,1
Dimension KF mm : 6,0
Tolerance mm : ±0,2
Dimension MS mm : 0,8
Tolerance mm : ±0,2

MICROSWITCH
SET
mm : 0,8...3,0
: ARF 12,0

CONTROL LEVER POSITION SET

Control lever
position YA mm : 37,2..41,2
Control lever
position YB mm : 61,3..69,7

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.04.96
Test oil : ISO 4113

Part no. : 0 460 404 086
Pump designation : VE4/10F2100L414 2

Customer-spec. information

Customer : VM
Motor : 425 SLTRS
Power KW : 77.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1000
Aneroid pressure hPa : 1000
Setting mm : 2.2
Tolerance mm : 0.2
Shutoff solenoid Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1000
Aneroid pressure hPa : 1000
Setting hPa : 4.5
Tolerance hPa : 0.3
Shutoff solenoid Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1500
Aneroid pressure hPa : 1000
Del. quantity cm³/1000 strokes : 59.5
Tolerance cm³/1000 strokes : 0.5
Spread cm³/1000 strokes : 3.0
Check tolerance cm³/1000S. : 3.0
Shutoff solenoid Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 700
Del. quantity cm³/1000 strokes : 43.5
Tolerance cm³/1000 strokes : 0.5
Shutoff solenoid Volt : 12
Check tolerance cm³/1000S. : 3.0

IDLE SETTING

Rated speed rpm : 450
Del. quantity cm³/1000 strokes : 15.0
Tolerance cm³/1000 strokes : 2.0
Shutoff solenoid Volt : 12

Spread
cm3/1000 strokes : 3.0
Check tolerance
cm3/1000S. : 3.0

Del. quantity
cm3/1000 strokes : -0.9
Tolerance
cm3/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2300
Pressure hPa : 1000
Del. quantity
cm3/1000 strokes : 43.0
Tolerance
cm3/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
SV travel mm : 4.6
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 700
Aneroid pressure
hPa : 1000
SV travel mm : 1.1
Tolerance mm : 0.4

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 65.0
Tolerance
cm3/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

LOAD-DEPENDENT START OF DELIVERY SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1500
Pressure hPa : 1000
Del. quantity
cm3/1000 strokes : -25.0
Tolerance
cm3/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2100
Aneroid pressure
hPa : 1000
SV travel mm : 6.6
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : -0.2
Tolerance
cm3/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2100
Aneroid pressure
hPa : 1000
Supply pump
pressure bar : 7.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000

Rated speed rpm : 700
Aneroid pressure
hPa : 1000

Supply pump pressure bar	:	3.6	Aneroid pressure hPa	:	500
Tolerance hPa	:	0.3	LDA/		
Shutoff solenoid Volt	:	12	HBA stroke mm	:	5.7
OVERFLOW QUANTITY					
Rated speed rpm	:	2100	Del. quantity cm3/1000 strokes	:	57.0
Aneroid pressure hPa	:	1000	Tolerance cm3/1000 strokes	:	0.5
Overflow quantity ccm/10s	:	97.2	Check tolerance cm3/1000S.	:	2.5
Tolerance ccm/10s	:	41.6	Shutoff solenoid Volt	:	12
Check tolerance ccm/10s	:	41.6	Rated speed rpm	:	2100
Shutoff solenoid Volt	:	12	Aneroid pressure hPa	:	1000
Rated speed rpm	:	700	Del. quantity cm3/1000 strokes	:	58.5
Aneroid pressure hPa	:	1000	Tolerance cm3/1000 strokes	:	1.5
Overflow quantity ccm/10s	:	63.8	Check tolerance cm3/1000S.	:	3.0
Tolerance ccm/10s	:	22.2	Shutoff solenoid Volt	:	12
Check tolerance ccm/10s	:	22.2	Rated speed rpm	:	700
Shutoff solenoid Volt	:	12	Aneroid pressure hPa	:	1000
DELIVERY AND BREAKAWAY CHARACTERISTIC					
Rated speed rpm	:	2300	Del. quantity cm3/1000 strokes	:	60.5
Aneroid pressure hPa	:	1000	Tolerance cm3/1000 strokes	:	1.5
Del. quantity cm3/1000 strokes	:	43.0	Check tolerance cm3/1000S.	:	3.0
Tolerance cm3/1000 strokes	:	3.0	Shutoff solenoid Volt	:	12
Check tolerance cm3/1000S.	:	4.0	Rated speed rpm	:	1500
Shutoff solenoid Volt	:	12	Aneroid pressure hPa	:	1000
Rated speed rpm	:	2550	Del. quantity cm3/1000 strokes	:	59.5
Aneroid pressure hPa	:	1000	Tolerance cm3/1000 strokes	:	0.5
Del. quantity cm3/1000 strokes	:	4.0	Check tolerance cm3/1000S.	:	2.0
Check tolerance cm3/1000S.	:	4.0	Shutoff solenoid Volt	:	12
Shutoff solenoid Volt	:	12	<hr/>		
Rated speed rpm	:	700	ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP		
Rated speed rpm	:	450	Rated speed rpm	:	450
Del. quantity cm3/1000 strokes	:	1.5	Del. quantity cm3/1000 strokes	:	1.5
Tolerance cm3/1000 strokes	:	1.5	Tolerance cm3/1000 strokes	:	1.5

Check tolerance cm ³ /1000S. : 1.5	Shutoff solenoid Volt : 12
TIMING-DEVICE TRAVEL DIFFERENCE	
Rated speed rpm : 450	Rated speed rpm : 1500
Del. quantity cm ³ /1000 strokes : 1.5	Aneroid pressure hPa : 1000
Tolerance cm ³ /1000 strokes : 1.5	Del. quantity cm ³ /1000 strokes : -0.9
Spread cm ³ /1000 strokes : 5.0	Tolerance cm ³ /1000 strokes : 0.1
Check tolerance cm ³ /1000S. : 1.5	Check tolerance cm ³ /1000S. : 0.1
Spread cm ³ /1000 strokes : 5.0	Shutoff solenoid Volt : 12
DELIVERY DIFFERENCE	
IDLE DELIVERY	Rated speed rpm : 1500
Rated speed rpm : 600	Aneroid pressure hPa : 1000
Del. quantity cm ³ /1000 strokes : 2.5	Del. quantity cm ³ /1000 strokes : 5.0
Tolerance cm ³ /1000 strokes : 2.5	Tolerance cm ³ /1000 strokes : 3.0
Check tolerance cm ³ /1000S. : 2.5	Check tolerance cm ³ /1000S. : 3.0
Shutoff solenoid Volt : 12	Shutoff solenoid Volt : 12
Rated speed rpm : 500	TIMING-DEVICE TRAVEL DIFFERENCE
Del. quantity cm ³ /1000 strokes : 5.0	Rated speed rpm : 1500
Tolerance cm ³ /1000 strokes : 2.5	Aneroid pressure hPa : 1000
Check tolerance cm ³ /1000S. : 3.0	Tolerance mm : 0.3
Shutoff solenoid Volt : 12	Check tolerance mm : 0.3
	Shutoff solenoid Volt : 12
EXHAUST-GAS RECIRCULATION	
CHECKING LOAD-DEPENDENT START OF DELIVERY	Rated speed rpm : 1000
DELIVERY DIFFERENCE	Aneroid pressure hPa : 1000
Rated speed rpm : 1500	Del. quantity cm ³ /1000 strokes : 43.5
Aneroid pressure hPa : 1000	Tolerance cm ³ /1000 strokes : 0.5
Del. quantity cm ³ /1000 strokes : -30.5	Check tolerance cm ³ /1000S. : 2.5
Tolerance cm ³ /1000 strokes : 3.0	Shutoff solenoid Volt : 12
Check tolerance cm ³ /1000S. : 3.0	START TRANSITION
	Rated speed rpm : 550

Del. quantity
cm³/1000 strokes : 42.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 60.0
Tolerance
cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/
HBA stroke mm : 5,7
Dimension K mm : 3,3
Tolerance mm : +0,1
Dimension KF mm : 5,4
Tolerance mm : +0,2
Dimension MS mm : 0,8
Tolerance mm : +0,2
TLA travel mm : 12,7

MICROSWITCH
SET
: ARF 12,0

CONTROL LEVER POSITION
SET

Control lever
position YA mm : 38,8..40,8
Control lever
position YB mm : 38,6..48,4

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.04.96
Test oil : ISO 4113

Part no. : 0 460 494 437
Pump designation : VE4/9F2250R593-5

Customer-spec. information

Customer : RENAULT
Motor : G8T - 760
Power KW : 81.0

TEST BENCH REQUIREMENTS

Calibrating-oil return

temperature °C : 45
Tolerance °C : 1

Overflow restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder assembly : 1 688 901 022

Opening pressure bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250
Aneroid pressure hPa : 1000
Setting mm : 2.8
Tolerance mm : 0.2
Shutoff solenoid Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Aneroid pressure hPa : 1000
Setting hPa : 5.4
Tolerance hPa : 0.3
Shutoff solenoid Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1250
Aneroid pressure hPa : 1000
Del. quantity cm³/1000 strokes : 58.7
Tolerance cm³/1000 strokes : 0.5
Spread cm³/1000 strokes : 2.5
Check tolerance cm³/1000S. : 3.0
Shutoff solenoid Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 500
Del. quantity cm³/1000 strokes : 43.0
Tolerance cm³/1000 strokes : 0.5
Shutoff solenoid Volt : 12
Check tolerance cm³/1000S. : 3.0

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 450
Del. quantity cm³/1000 strokes : 7.0
Tolerance cm³/1000 strokes : 2.0

Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2450
Pressure hPa : 1000
Del. quantity cm³/1000 strokes : 30.0
Tolerance cm³/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

SET GRADUATED STARTING DELIVERY
CONTROL LEVER, IDLE STOP

Rated speed rpm : 100
Del. quantity cm³/1000 strokes : 52.0
Tolerance cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

LOAD-DEPENDENT START OF DELIVERY
SETTING

DELIVERY DIFFERENCE
Rated speed rpm : 1250
Del. quantity cm³/1000 strokes : -8.5
Tolerance cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
Del. quantity cm³/1000 strokes : -0.2
Tolerance cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Del. quantity cm³/1000 strokes : -0.7
Tolerance cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2150
Aneroid pressure hPa : 1000
Tolerance mm : 0.4
Check tolerance mm : 0.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 1000
Aneroid pressure hPa : 1000
SV travel mm : 1.9
Tolerance mm : 0.4
Check tolerance mm : 0.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Aneroid pressure hPa : 1000

SV travel mm : 2.7
Tolerance mm : 1.2
Check tolerance mm : 1.2
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2150
Aneroid pressure hPa : 1000
Supply pump pressure bar : 7.6
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Aneroid pressure hPa : 1000
Supply pump pressure bar : 3.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 500
Overflow quantity
ccm/10s : 63.8
Tolerance
ccm/10s : 22.2

Check tolerance
ccm/10s : 22.2
Shutoff solenoid
Volt : 12

Rated speed rpm : 2150
Aneroid pressure
hPa : 1000
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6

Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2450
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 30.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S.
Shutoff solenoid
Volt : 12

Rated speed rpm : 2525
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S.
Shutoff solenoid
Volt : 12

Rated speed rpm : 2600
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 2.5
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S.
Shutoff solenoid
Volt : 12

Rated speed rpm : 750
Aneroid pressure
hPa : 300

LDA/
HBA stroke mm : 7.3
Del. quantity
cm³/1000 strokes : 50.0
Tolerance
cm³/1000 strokes : 0.5
Check tolerance
cm³/1000S.
Shutoff solenoid
Volt : 12

Rated speed rpm : 2150
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 56.7
Tolerance
cm³/1000 strokes : 1.0
Check tolerance
cm³/1000S.
Shutoff solenoid
Volt : 12

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 59.6
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S.
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 57.2
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S.
Shutoff solenoid
Volt : 12

Rated speed rpm : 1250
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 58.7
Tolerance
cm³/1000 strokes : 0.5

Check tolerance
cm³/1000S. : 2.3
Shutoff solenoid
Volt : 12

**ELECTR. SHUTOFF
CONTROL LEVER, IDLE STOP**

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5
Spread
cm³/1000 strokes : 5.0

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Spread
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 1.5
Spread
cm³/1000 strokes : 5.0

**CHECKING LOAD-DEPENDENT
START OF DELIVERY**

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -11.0
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 2.5
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -0.7

Tolerance
cm³/1000 strokes : 0.1
Check tolerance
cm³/1000S. : 0.1
Shutoff solenoid
Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 5.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Tolerance mm : 0.2
Check
tolerance mm : 0.3
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 37.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 180
Del. quantity
cm³/1000 strokes : 54.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/
HBA stroke mm : 7.3
Dimension K mm : 3,7
Tolerance mm : ±0,1
Dimension KF mm : 6,0
Tolerance mm : ±0,2
Dimension MS mm : 0,9
Tolerance mm : ±0,2

POTENTIOMETER
SET

1. measurement
voltage Volt : 5,0
1. measurement
voltage Volt : 4,5

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 05.02.96
Test oil : ISO 4113

Part no. : 0 460 494 354
Pump designation : VE4/9F2150R577

Customer-spec. information

Customer : NISSAN-MISA
Motor : GX-3
Power KW : 53.0

TEST BENCH REQUIREMENTS**Calibrating-oil**

return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle hold
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS**INJECTION PUMP SETTING VALUES****TIMING DEVICE TRAVEL**

Rated speed rpm : 1200
Setting mm : 3.2
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1200
Setting hPa : 5.9
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 2150
Del. quantity
cm3/1000 strokes : 44.5
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 2.5
Shutoff solenoid
Volt : 12

IDLE SETTING

Rated speed rpm : 375
Del. quantity
cm3/1000 strokes : 8.5
Tolerance
cm3/1000 strokes : 2.0
Shutoff solenoid
Volt : 12
Spread
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 3.0

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2500
Del. quantity
cm3/1000 strokes : 15.0
Tolerance
cm3/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 60.0

Tolerance
cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Overflow quantity
ccm/10s : 63.8
Tolerance
ccm/10s : 22.2

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2150
SV travel mm : 9.2
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 900
SV travel mm : 1.2
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2150
Supply pump
pressure bar : 8.7
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 900
Supply pump
pressure bar : 5.0
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2150
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6
Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 12

Check tolerance
ccm/10s : 22.2
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2500
Del. quantity
cm³/1000 strokes : 15.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 4.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 2350
Del. quantity
cm³/1000 strokes : 33.3
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 5.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 2700
Del. quantity
cm³/1000 strokes : 2.5
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 2.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 900
Del. quantity
cm³/1000 strokes : 42.2
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 2.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 1200
Del. quantity
cm³/1000 strokes : 43.2
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 2.5

Shutoff solenoid
 Volt : 12
 Rated speed rpm : 1800
 Del. quantity
 cm3/1000 strokes : 44.3
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 2.5
 Shutoff solenoid
 Volt : 12
 Rated speed rpm : 600
 Del. quantity
 cm3/1000 strokes : 41.0
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 2.5
 Shutoff solenoid
 Volt : 12
 Rated speed rpm : 2150
 Del. quantity
 cm3/1000 strokes : 44.5
 Tolerance
 cm3/1000 strokes : 0.5
 Check tolerance
 cm3/1000S. : 1.3
 Shutoff solenoid
 Volt : 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 375
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5
 Spread
 cm3/1000 strokes : 5.0

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 375
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Spread
 cm3/1000 strokes : 5.0
 Check tolerance
 cm3/1000S. : 1.5

Spread
 cm3/1000 strokes : 5.0

IDLE DELIVERY

Rated speed rpm : 800
 Del. quantity
 cm3/1000 strokes : 2.5
 Tolerance
 cm3/1000 strokes : 2.5
 Check tolerance
 cm3/1000S. : 2.5
 Shutoff solenoid
 Volt : 12
 Rated speed rpm : 500
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5
 Shutoff solenoid
 Volt : 12

EXHAUST-GAS RECIRCULATION

Del. quantity
 cm3/1000 strokes : 0.80
 Tolerance
 cm3/1000 strokes : 0.02
 Check tolerance
 cm3/1000S. : 0.10

START TRANSITION

Rated speed rpm : 400
 Del. quantity
 cm3/1000 strokes : 45.0
 Tolerance
 cm3/1000 strokes : 20.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 270
 Del. quantity
 cm3/1000 strokes : 70.0
 Tolerance
 cm3/1000 strokes : 20.0
 Shutoff solenoid
 Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : $\pm 0,1$
Dimension KF mm : 5,4
Tolerance mm : $\pm 0,2$
Dimension MS mm : 1,2
Tolerance mm : $\pm 0,2$
KSB travel mm : 4,3
TLA travel mm : 6,5

POTENTIOMETER
SET

1. measurement
voltage Volt : 5,0
1. measurement
voltage Volt : 0,8

CONTROL LEVER POSITION
SET

Control lever
position YA mm : 35,1..39,1

Control lever
position YB mm : 56,9..68,1

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.02.96
Test oil : ISO 4113

Part no. : 0 460 494 355
Pump designation : VE4/9F2150R577-1

Customer-spec. information

Customer : NISSAN-MISA
Motor : GX-3
Power KW : 53.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00
x inside diameter : 2.00
x length mm : 450

REMARKS**INJECTION PUMP SETTING VALUES****TIMING DEVICE TRAVEL**

Rated speed rpm : 1200
Setting mm : 3.2
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1200
Setting hPa : 5.9
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 2150
Del. quantity
cm3/1000 strokes : 44.5
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 2.5
Shutoff solenoid
Volt : 12

IDLE SETTING

Rated speed rpm : 375
Del. quantity
cm3/1000 strokes : 8.5
Tolerance
cm3/1000 strokes : 2.0
Shutoff solenoid
Volt : 12
Spread
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 3.0

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2500
Del. quantity
cm3/1000 strokes : 15.0
Tolerance
cm3/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 60.0

Tolerance
cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Overflow quantity
ccm/10s : 63.8
Tolerance
ccm/10s : 22.2

Check tolerance
ccm/10s : 22.2
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2150
SV travel mm : 9.2
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2500
Del. quantity
cm³/1000 strokes : 15.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000s. : 4.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 900
SV travel mm : 1.2
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 2350
Del. quantity
cm³/1000 strokes : 33.3
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000s. : 5.5
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2150
Supply pump
pressure bar : 8.7
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 2700
Del. quantity
cm³/1000 strokes : 2.5
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000s. : 2.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 900
Supply pump
pressure bar : 5.0
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 900
Del. quantity
cm³/1000 strokes : 42.2
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000s. : 2.5
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2150
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6
Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 1200
Del. quantity
cm³/1000 strokes : 43.2
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000s. : 2.5

Shutoff solenoid		+	Spread
Volt	: 12		cm ³ /1000 strokes : 5.0
Rated speed rpm	: 1800		+
Del. quantity		+	IDLE DELIVERY
cm ³ /1000 strokes	: 44.3		
Tolerance		+	Rated speed rpm : 800
cm ³ /1000 strokes	: 1.5		Del. quantity
Check tolerance		+	cm ³ /1000 strokes : 2.5
cm ³ /1000S.	: 2.5		Tolerance
Shutoff solenoid		+	cm ³ /1000 strokes : 2.5
Volt	: 12		Check tolerance
Rated speed rpm	: 600		cm ³ /1000S. : 2.5
Del. quantity		+	Shutoff solenoid
cm ³ /1000 strokes	: 41.0		Volt : 12
Tolerance		+	+
cm ³ /1000 strokes	: 1.5		Rated speed rpm : 500
Check tolerance		+	Del. quantity
cm ³ /1000S.	: 2.5		cm ³ /1000 strokes : 1.5
Shutoff solenoid		+	Tolerance
Volt	: 12		cm ³ /1000 strokes : 1.5
Rated speed rpm	: 2150		Check tolerance
Del. quantity		+	cm ³ /1000S. : 1.5
cm ³ /1000 strokes	: 44.5		Shutoff solenoid
Tolerance		+	Volt : 12
cm ³ /1000 strokes	: 0.5		+
Check tolerance		+	START TRANSITION
cm ³ /1000S.	: 1.3		
Shutoff solenoid		+	Rated speed rpm : 400
Volt	: 12		Del. quantity
ELECTR. SHUTOFF		+	cm ³ /1000 strokes : 45.0
CONTROL LEVER, IDLE STOP			Tolerance
Rated speed rpm	: 375		cm ³ /1000 strokes : 20.0
Del. quantity		+	Shutoff solenoid
cm ³ /1000 strokes	: 1.5		Volt : 12
Tolerance		+	+
cm ³ /1000 strokes	: 1.5		Rated speed rpm : 270
Check tolerance		+	Del. quantity
cm ³ /1000S.	: 1.5		cm ³ /1000 strokes : 70.0
Spread		+	Tolerance
cm ³ /1000 strokes	: 5.0		cm ³ /1000 strokes : 20.0
FULL-LOAD STOP CONTROL LEVER			Shutoff solenoid
Rated speed rpm	: 375		Volt : 12
Del. quantity		+	+
cm ³ /1000 strokes	: 1.5		ASSEMBLY AND ADJUSTMENT DIMENSIONS
Tolerance		+	Dimension K mm : 3,3
cm ³ /1000 strokes	: 1.5		Tolerance mm : ±0,1
Spread		+	Dimension KF mm : 5,4
cm ³ /1000 strokes	: 5.0		Tolerance mm : ±0,2
Check tolerance		+	Dimension MS mm : 1,2
cm ³ /1000S.	: 1.5		Tolerance mm : ±0,2
		+	KSB travel mm : 4,3
		+	TLA travel mm : 6,5

CONTROL LEVER POSITION
SET

Control lever
position YA mm : 35,1..39,1

Control lever
position YB mm : 56,9..68,1

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.02.95
Test oil : ISO 4113

Part no. : 0 460 494 385
Pump designation : VE4/9F2150R281-2

Customer-spec. information

Customer : PSA
Motor : XUD11ATE-Y BVA
Power KW : 78.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test Lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250
Aneroid pressure hPa : 1000
Setting mm : 2.9
Tolerance mm : 0.1
Shutoff solenoid Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Aneroid pressure hPa : 1000
Setting hPa : 5.3
Tolerance hPa : 0.3
Shutoff solenoid Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1250
Aneroid pressure hPa : 1000
Del. quantity cm³/1000 strokes : 61.5
Tolerance cm³/1000 strokes : 0.5
Spread cm³/1000 strokes : 2.5
Check tolerance cm³/1000S. : 2.5
Shutoff solenoid Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 500
Del. quantity cm³/1000 strokes : 42.5
Tolerance cm³/1000 strokes : 0.5
Spread cm³/1000 strokes : 2.5
Shutoff solenoid Volt : 12
Check tolerance cm³/1000S. : 2.5
Check tolerance cm³/1000S. : 2.5

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 550

Del. quantity
 cm³/1000 strokes : 3.0
 Tolerance
 cm³/1000 strokes : 0.5
 Shutoff solenoid
 Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2250
 Pressure hPa : 1000
 Del. quantity
 cm³/1000 strokes : 52.0
 Tolerance
 cm³/1000 strokes : 3.0
 Shutoff solenoid
 Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
 Del. quantity
 cm³/1000 strokes : 75.0
 Tolerance
 cm³/1000 strokes : 5.0
 Shutoff solenoid
 Volt : 12

SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP

Rated speed rpm : 200
 Del. quantity
 cm³/1000 strokes : 77.0
 Tolerance
 cm³/1000 strokes : 1.0
 Shutoff solenoid
 Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
 Aneroid pressure
 hPa : 1000
 SV travel mm : 6.9
 Tolerance mm : 0.3
 Check
 tolerance mm : 0.7
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1000
 Aneroid pressure
 hPa : 1000

SV travel mm : 1.6
 Tolerance mm : 0.3
 Check
 tolerance mm : 0.7
 Shutoff solenoid
 Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2000
 Aneroid pressure
 hPa : 1000
 Supply pump
 pressure bar : 7.4
 Tolerance hPa : 0.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1000
 Aneroid pressure
 hPa : 1000
 Supply pump
 pressure bar : 4.6
 Tolerance hPa : 0.3
 Shutoff solenoid
 Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2000
 Overflow quantity
 ccm/10s : 97.2
 Tolerance
 ccm/10s : 41.6
 Check tolerance
 ccm/10s : 41.6
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 500
 Overflow quantity
 ccm/10s : 62.5
 Tolerance
 ccm/10s : 20.8

Check tolerance
 ccm/10s : 20.8
 Shutoff solenoid
 Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2250
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 52.0

Tolerance			
cm3/1000 strokes	: 3.0		
Check tolerance			
cm3/1000S.	: 4.0		
Shutoff solenoid			
Volt	: 12		
Rated speed rpm	: 2400		
Aneroid pressure			
hPa	: 1000		
Del. quantity			
cm3/1000 strokes	: 37.0		
Check tolerance			
cm3/1000S.	: 4.0		
Shutoff solenoid			
Volt	: 12		
Rated speed rpm	: 2700		
Aneroid pressure			
hPa	: 1000		
Del. quantity			
cm3/1000 strokes	: 8.0		
Tolerance			
cm3/1000 strokes	: 3.0		
Check tolerance			
cm3/1000S.	: 4.0		
Shutoff solenoid			
Volt	: 12		
Rated speed rpm	: 750		
Aneroid pressure			
hPa	: 400		
Del. quantity			
cm3/1000 strokes	: 56.5		
Tolerance			
cm3/1000 strokes	: 0.5		
Check tolerance			
cm3/1000S.	: 3.0		
Shutoff solenoid			
Volt	: 12		
Rated speed rpm	: 2000		
Aneroid pressure			
hPa	: 1000		
Del. quantity			
cm3/1000 strokes	: 57.5		
Tolerance			
cm3/1000 strokes	: 1.5		
Check tolerance			
cm3/1000S.	: 2.3		
Shutoff solenoid			
Volt	: 12		
Rated speed rpm	: 500		
Aneroid pressure			
hPa	: 1000		
Del. quantity			
cm3/1000 strokes	: 17.5		
Shutoff solenoid			
Volt	: 12		
Rated speed rpm	: 1000		
Aneroid pressure			
hPa	: 1000		
Del. quantity			
cm3/1000 strokes	: 62.0		
Tolerance			
cm3/1000 strokes	: 1.5		
Check tolerance			
cm3/1000S.	: 2.5		
Shutoff solenoid			
Volt	: 12		
Rated speed rpm	: 500		
Aneroid pressure			
hPa	: 1000		
Del. quantity			
cm3/1000 strokes	: 60.5		
Tolerance			
cm3/1000 strokes	: 1.5		
Check tolerance			
cm3/1000S.	: 2.5		
Shutoff solenoid			
Volt	: 12		
Rated speed rpm	: 1250		
Aneroid pressure			
hPa	: 1000		
Del. quantity			
cm3/1000 strokes	: 61.5		
Tolerance			
cm3/1000 strokes	: 0.5		
Check tolerance			
cm3/1000S.	: 2.3		
Shutoff solenoid			
Volt	: 12		

MECHANICAL SHUTOFF

Rated speed rpm	: 2000	
Aneroid pressure		
hPa	: 1000	
Del. quantity		
cm3/1000 strokes	: 1.5	
Tolerance		
cm3/1000 strokes	: 1.5	
Check tolerance		
cm3/1000S.	: 1.5	
Shutoff solenoid		
Volt	: 12	

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm	: 325	
Del. quantity		
cm3/1000 strokes	: 1.5	

Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5

IDLE DELIVERY

Rated speed rpm : 375
Del. quantity
cm³/1000 strokes : 8.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

EXHAUST-GAS RECIRCULATION

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 25.0
Tolerance
cm³/1000 strokes : 0.5
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 17.5
Tolerance
cm³/1000 strokes : 0.5
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 325
Del. quantity
cm³/1000 strokes : 40.5
Tolerance
cm³/1000 strokes : 3.5
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : ±0,1
Dimension KF mm : 5,4
Tolerance mm : ±0,2
Dimension MS mm : 1,4
Tolerance mm : ±0,2

POTENTIOMETER SET

1. measurement
voltage Volt : 5,0
1. measurement
voltage Volt : ARF1=2,9 V
2. measurement
voltage Volt : ARF2=1,9 V

MICROSWITCH SET

: ARF 12,0

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.07.94
Test oil : ISO 4113

Part no. : 0 460 484 054
Pump designation : VE4/8F2300R425-1

Customer-spec. information

Customer : PSA
Motor : XUD9AL Peug. D70

TEST BENCH REQUIREMENTS

Overflow restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder assembly : 1 688 901 022

Opening pressure bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 0,3
Tolerance mm : +0,02
Outlet : A

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250
Setting mm : 3.7
Tolerance mm : 0.2
Shutoff solenoid Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Setting hPa : 6.0
Tolerance hPa : 0.3
Shutoff solenoid Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity cm³/1000 strokes : 30.2
Tolerance cm³/1000 strokes : 0.5
Spread cm³/1000 strokes : 2.0
Shutoff solenoid Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 500
Del. quantity cm³/1000 strokes : 3.0
Tolerance cm³/1000 strokes : 0.5
Shutoff solenoid Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2650
Del. quantity cm³/1000 strokes : 11.0
Tolerance cm³/1000 strokes : 2.0
Shutoff solenoid Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity cm ³ /1000 strokes	: 55.0	Check tolerance mm	: 0.7		
Tolerance cm ³ /1000 strokes	: 13.0	Shutoff solenoid			
Shutoff solenoid		Volt	: 12		
Volt	: 12	SUPPLY PUMP PRESSURE CHARACTERISTIC			
LOAD-DEPENDENT START OF DELIVERY SETTING					
DELIVERY DIFFERENCE					
Rated speed rpm	: 1250	Rated speed rpm	: 2200		
Del. quantity cm ³ /1000 strokes	: -6.0	Supply pump pressure bar	: 8.5		
Tolerance cm ³ /1000 strokes	: 1.0	Tolerance hPa	: 0.3		
Shutoff solenoid		Shutoff solenoid			
Volt	: 12	Volt	: 12		
PRESSURE DIFFERENCE					
Rated speed rpm	: 1250	Rated speed rpm	: 500		
Del. quantity cm ³ /1000 strokes	: -0.2	Supply pump pressure bar	: 3.6		
Tolerance cm ³ /1000 strokes	: 0.1	Tolerance hPa	: 0.3		
Shutoff solenoid		Shutoff solenoid			
Volt	: 12	Volt	: 12		
OVERFLOW QUANTITY					
Rated speed rpm	: 1250	Rated speed rpm	: 2200		
Overflow quantity ccm/10s	: 97.2	Overflow quantity ccm/10s	: 97.2		
Tolerance ccm/10s	: 41.6	Tolerance ccm/10s	: 41.6		
Check tolerance ccm/10s		Check tolerance ccm/10s	: 55.5		
Shutoff solenoid		Shutoff solenoid			
Volt	: 12	Volt	: 12		
TIMING-DEVICE TRAVEL DIFFERENCE					
Rated speed rpm	: 1250	Rated speed rpm	: 500		
Del. quantity cm ³ /1000 strokes	: -1.0	Overflow quantity ccm/10s	: 63.8		
Tolerance cm ³ /1000 strokes	: 0.1	Tolerance ccm/10s	: 22.2		
Shutoff solenoid		Check tolerance ccm/10s	: 34.7		
Volt	: 12	Shutoff solenoid			
INJECTION-PUMP TEST SPECIFICATIONS					
TIMING DEVICE CHARACTERISTIC					
Rated speed rpm	: 2000	Rated speed rpm	: 2650		
SV travel mm	: 7.1	Del. quantity cm ³ /1000 strokes	: 11.0		
Tolerance mm	: 0.4	Tolerance cm ³ /1000 strokes	: 2.0		
Check tolerance mm	: 0.7	Check tolerance cm ³ /1000S.	: 4.0		
Shutoff solenoid		Shutoff solenoid			
Volt	: 12	Volt	: 12		
Rated speed rpm	: 800	Rated speed rpm	: 2500		
SV travel mm	: 1.6	Del. quantity cm ³ /1000 strokes	: 22.5		
Tolerance mm	: 0.4				

Tolerance
cm3/1000 strokes : 3.0
Check tolerance
cm3/1000S. : 5.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2900
Del. quantity
cm3/1000 strokes : 3.0

Tolerance
cm3/1000 strokes : 3.0
Check tolerance
cm3/1000S. : 3.0

Shutoff solenoid
Volt : 12

Rated speed rpm : 2200
Del. quantity
cm3/1000 strokes : 33.0

Tolerance
cm3/1000 strokes : 1.0
Check tolerance
cm3/1000S. : 2.2

Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 31.3

Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 3.0

Shutoff solenoid
Volt : 12

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : 30.2

Tolerance
cm3/1000 strokes : 0.5
Check tolerance
cm3/1000S. : 2.2

Shutoff solenoid
Volt : 12

ELECTR. SHUTOFF
CONTROL LEVER, IDLE STOP

Rated speed rpm : 375
Del. quantity
cm3/1000 strokes : 1.5

Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5

CHECKING LOAD-DEPENDENT
START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : -8.5

Tolerance
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 5.0

Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : -1.0

Tolerance
cm3/1000 strokes : 0.1
Check tolerance
cm3/1000S. : 0.1

Shutoff solenoid
Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : 5.0

Tolerance
cm3/1000 strokes : 3.0
Check tolerance
cm3/1000S. : 3.0

Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
Supply pump
pressure bar : -1.5

Tolerance hPa : 0.3

Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Tolerance mm : 0.5

Check
tolerance mm : 0.6

Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 30.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 225
Del. quantity
cm³/1000 strokes : 54.0
Tolerance
cm³/1000 strokes : 17.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,7
Tolerance mm : ±0,1
Dimension KF mm : 6,0
Tolerance mm : ±0,2
Dimension MS mm : 1,4
Tolerance mm : ±0,2

CONTROL LEVER POSITION SET

Control lever
position YA mm : 18,8..22,8

Control lever
position YB mm : 78,4..90,6

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.04.95
Test oil : ISO 4113

Part no. : 0 460 484 098
Pump designation : VE4/8F2300R425-11

Customer-spec. information

Customer : PSA
Motor : XUD9 A/L
Power KW : 51.0

TEST BENCH REQUIREMENTS

Calibrating-oil return
temperature °C : 45
Tolerance °C : 1

Overflow restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder assembly : 1 688 901 022

Opening pressure bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS**BEGINNING OF DELIVERY**

Start of delivery blocking

Plunger stroke mm : 0,3
Tolerance mm : ±0,02
Outlet : A

INJECTION PUMP SETTING VALUES**TIMING DEVICE TRAVEL**

Rated speed rpm : 1250
Setting mm : 3.7
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Setting hPa : 6.0
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 30.2
Tolerance
cm³/1000 strokes : 0.5
Spread
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 5.0
Tolerance
cm³/1000 strokes : 0.5
Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2650
Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
 Del. quantity
 cm³/1000 strokes : 55.0
 Tolerance
 cm³/1000 strokes : 13.0
 Shutoff solenoid
 Volt : 12

SV travel mm : 1.6
 Tolerance mm : 0.4
 Check
 tolerance mm : 0.7
 Shutoff solenoid
 Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2200
 Supply pump
 pressure bar : 8.5
 Tolerance hPa : 0.3
 Shutoff solenoid
 Volt : 12

LOAD-DEPENDENT START OF DELIVERY SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm³/1000 strokes : -6.0
 Tolerance
 cm³/1000 strokes : 1.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 500
 Supply pump
 pressure bar : 3.6
 Tolerance hPa : 0.3
 Shutoff solenoid
 Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm³/1000 strokes : -0.2
 Tolerance
 cm³/1000 strokes : 0.1
 Shutoff solenoid
 Volt : 12

Overflow quantity
 ccm/10s : 97.2
 Tolerance
 ccm/10s : 41.6
 Check tolerance
 ccm/10s : 55.5
 Shutoff solenoid
 Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm³/1000 strokes : -1.0
 Tolerance
 cm³/1000 strokes : 0.1
 Shutoff solenoid
 Volt : 12

Overflow quantity
 ccm/10s : 63.8
 Tolerance
 ccm/10s : 22.2
 Check tolerance
 ccm/10s : 34.7

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
 SV travel mm : 7.1
 Tolerance mm : 0.4
 Check
 tolerance mm : 0.7
 Shutoff solenoid
 Volt : 12
 Rated speed rpm : 800

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2650
 Del. quantity
 cm³/1000 strokes : 11.0
 Tolerance
 cm³/1000 strokes : 2.0
 Check tolerance
 cm³/1000S. : 4.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm	:	2500	Check tolerance cm ³ /1000S.	:	1.5	
Del. quantity cm ³ /1000 strokes	:	22.5	FULL-LOAD STOP CONTROL LEVER			
Tolerance cm ³ /1000 strokes	:	3.0	Rated speed rpm	:	400	
Check tolerance cm ³ /1000S.	:	5.0	Del. quantity cm ³ /1000 strokes	:	1.5	
Shutoff solenoid Volt	:	12	Tolerance cm ³ /1000 strokes	:	1.5	
Rated speed rpm	:	2900	Check tolerance cm ³ /1000S.	:	1.5	
Del. quantity cm ³ /1000 strokes	:	3.0	CHECKING LOAD-DEPENDENT START OF DELIVERY			
Tolerance cm ³ /1000 strokes	:	3.0	DELIVERY DIFFERENCE			
Check tolerance cm ³ /1000S.	:	3.0	Rated speed rpm	:	1250	
Shutoff solenoid Volt	:	12	Del. quantity cm ³ /1000 strokes	:	-8.5	
Rated speed rpm	:	2200	Tolerance cm ³ /1000 strokes	:	5.0	
Del. quantity cm ³ /1000 strokes	:	33.0	Check tolerance cm ³ /1000S.	:	5.0	
Tolerance cm ³ /1000 strokes	:	1.0	Shutoff solenoid Volt	:	12	
Check tolerance cm ³ /1000S.	:	2.2	TIMING-DEVICE TRAVEL DIFFERENCE			
Shutoff solenoid Volt	:	12	Rated speed rpm	:	1250	
Rated speed rpm	:	500	Del. quantity cm ³ /1000 strokes	:	-1.0	
Del. quantity cm ³ /1000 strokes	:	31.3	Tolerance cm ³ /1000 strokes	:	0.1	
Tolerance cm ³ /1000 strokes	:	1.5	Check tolerance cm ³ /1000S.	:	0.1	
Check tolerance cm ³ /1000S.	:	3.0	Shutoff solenoid Volt	:	12	
Shutoff solenoid Volt	:	12	DELIVERY DIFFERENCE			
Rated speed rpm	:	1250	Rated speed rpm	:	1250	
Del. quantity cm ³ /1000 strokes	:	30.2	Del. quantity cm ³ /1000 strokes	:	5.0	
Tolerance cm ³ /1000 strokes	:	0.5	Tolerance cm ³ /1000 strokes	:	3.0	
Check tolerance cm ³ /1000S.	:	2.2	Check tolerance cm ³ /1000S.	:	3.0	
Shutoff solenoid Volt	:	12	Shutoff solenoid Volt	:	12	
<hr/>						
ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP						
Rated speed rpm	:	400	PRESSURE DIFFERENCE			
Del. quantity cm ³ /1000 strokes	:	1.5	Rated speed rpm	:	1250	
Tolerance cm ³ /1000 strokes	:	1.5				

Supply pump
pressure bar : -1.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

End of test-specification sheet

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Tolerance mm : 0.5
Check
tolerance mm : 0.6
Shutoff solenoid
Volt : 12

EXHAUST-GAS RECIRCULATION

Rated speed rpm : 1000
Tolerance
cm³/1000 strokes : 1.0
Check tolerance
cm³/1000S. : 4.0
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 30.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 225
Del. quantity
cm³/1000 strokes : 54.0
Tolerance
cm³/1000 strokes : 17.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,7
Tolerance mm : +0,1
Dimension KF mm : 6,0
Tolerance mm : +0,2
Dimension MS mm : 1,4
Tolerance mm : +0,2

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.11.95
Test oil : ISO 4113

Part no. : 0 460 484 109
Pump designation : VE4/8F2300R425-13

Customer-spec. information

Customer : PSA
Motor : XUD9 A L3
Power KW : 51.0

TEST BENCH REQUIREMENTS

Calibrating-oil return
temperature °C : 45
Tolerance °C : 1

Overflow restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder assembly : 1 688 901 022

Opening pressure bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 0,3
Tolerance mm : ±0,02
Outlet : A

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm : 3.5
Tolerance mm : 0.2
Shutoff solenoid Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250

Setting hPa : 6.0
Tolerance hPa : 0.3
Shutoff solenoid Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity cm³/1000 strokes : 30.2
Tolerance cm³/1000 strokes : 0.5
Spread cm³/1000 strokes : 2.0
Shutoff solenoid Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 500
Del. quantity cm³/1000 strokes : 5.0
Tolerance cm³/1000 strokes : 0.5
Shutoff solenoid Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2650
Del. quantity cm³/1000 strokes : 11.0
Tolerance cm³/1000 strokes : 2.0
Shutoff solenoid Volt : 12

SET GRADUATED STARTING DELIVERY
CONTROL LEVER, IDLE STOP

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 47.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

LOAD-DEPENDENT START OF DELIVERY
SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -6.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -0.2
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -1.0
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 800

SV travel mm : 0.8
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2200
Supply pump
pressure bar : 8.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Supply pump
pressure bar : 3.6
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2200
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6

Check tolerance
ccm/10s : 55.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Overflow quantity
ccm/10s : 63.8
Tolerance
ccm/10s : 22.2

Check tolerance
ccm/10s : 34.7
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2650
Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000s. : 4.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2500
 Del. quantity cm³/1000 strokes : 22.5
 Tolerance cm³/1000 strokes : 3.0
 Check tolerance cm³/1000S. : 5.0
 Shutoff solenoid Volt : 12

Rated speed rpm : 2900
 Del. quantity cm³/1000 strokes : 1.5
 Tolerance cm³/1000 strokes : 1.5
 Check tolerance cm³/1000S. : 1.5
 Shutoff solenoid Volt : 12

Rated speed rpm : 2200
 Del. quantity cm³/1000 strokes : 33.0
 Tolerance cm³/1000 strokes : 1.0
 Check tolerance cm³/1000S. : 2.2
 Shutoff solenoid Volt : 12

Rated speed rpm : 500
 Del. quantity cm³/1000 strokes : 31.3
 Tolerance cm³/1000 strokes : 1.5
 Check tolerance cm³/1000S. : 3.0
 Shutoff solenoid Volt : 12

Rated speed rpm : 1250
 Del. quantity cm³/1000 strokes : 30.2
 Tolerance cm³/1000 strokes : 0.5
 Check tolerance cm³/1000S. : 2.2
 Shutoff solenoid Volt : 12

MECHANICAL SHUTOFF

Rated speed rpm : 2200
 Del. quantity cm³/1000 strokes : 1.5
 Tolerance cm³/1000 strokes : 1.5
 Check tolerance cm³/1000S. : 1.5

Shutoff solenoid Volt : 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 400
 Del. quantity cm³/1000 strokes : 1.5
 Tolerance cm³/1000 strokes : 1.5
 Check tolerance cm³/1000S. : 1.5

CHECKING LOAD-DEPENDENT START OF DELIVERY

Rated speed rpm : 1250
 Del. quantity cm³/1000 strokes : -7.0
 Tolerance cm³/1000 strokes : 3.0
 Check tolerance cm³/1000S. : 3.0
 Shutoff solenoid Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
 Del. quantity cm³/1000 strokes : -1.0
 Tolerance cm³/1000 strokes : 0.1
 Check tolerance cm³/1000S. : 0.1
 Shutoff solenoid Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1250
 Del. quantity cm³/1000 strokes : 5.0
 Tolerance cm³/1000 strokes : 3.0
 Check tolerance cm³/1000S. : 3.0
 Shutoff solenoid Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
Supply pump pressure bar : -1.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

MICROSWITCH SET

mm : 0,8...3,0
: ARF 12,0

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Tolerance mm : 0.5
Check tolerance mm : 0.6
Shutoff solenoid
Volt : 12

End of test-specification sheet

EXHAUST-GAS RECIRCULATION

Rated speed rpm : 1000
Del. quantity cm³/1000 strokes : 21.4
Tolerance cm³/1000 strokes : 1.0
Check tolerance cm³/1000S. : 4.0
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 350
Del. quantity cm³/1000 strokes : 30.0
Tolerance cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 225
Del. quantity cm³/1000 strokes : 54.0
Tolerance cm³/1000 strokes : 17.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,7
Tolerance mm : ±0,1
Dimension KF mm : 6,0
Tolerance mm : ±0,2
Dimension MS mm : 1,4
Tolerance mm : ±0,2

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.02.96
Test oil : ISO 4113

Part no. : 0 460 484 110
Pump designation : VE4/8F2300R425-14

Customer-spec. information

Customer : PSA
Motor : XUD9AY-L3 C1T.ZX
Power KW : 50.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 0,3
Tolerance mm : +0,2
Outlet : A

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm : 3.5
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250

Setting hPa : 6.0
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 30.2
Tolerance
cm³/1000 strokes : 0.5
Spread
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 5.0
Tolerance
cm³/1000 strokes : 0.5
Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2650
Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

SET GRADUATED STARTING DELIVERY
CONTROL LEVER, IDLE STOP

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 47.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

LOAD-DEPENDENT START OF DELIVERY
SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -6.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -0.2
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -1.0
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 800

SV travel mm : 0.8
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2200
Supply pump
pressure bar : 8.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Supply pump
pressure bar : 3.6
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2200
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6

Check tolerance
ccm/10s : 55.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Overflow quantity
ccm/10s : 63.8
Tolerance
ccm/10s : 22.2

Check tolerance
ccm/10s : 34.7
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2650
Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2500
 Del. quantity cm³/1000 strokes : 22.5
 Tolerance cm³/1000 strokes : 3.0
 Check tolerance cm³/1000S. : 5.0
 Shutoff solenoid Volt : 12

Rated speed rpm : 2900
 Del. quantity cm³/1000 strokes : 1.5
 Tolerance cm³/1000 strokes : 1.5
 Check tolerance cm³/1000S. : 1.5
 Shutoff solenoid Volt : 12

Rated speed rpm : 2200
 Del. quantity cm³/1000 strokes : 33.0
 Tolerance cm³/1000 strokes : 1.0
 Check tolerance cm³/1000S. : 2.2
 Shutoff solenoid Volt : 12

Rated speed rpm : 500
 Del. quantity cm³/1000 strokes : 31.3
 Tolerance cm³/1000 strokes : 1.5
 Check tolerance cm³/1000S. : 3.0
 Shutoff solenoid Volt : 12

Rated speed rpm : 1250
 Del. quantity cm³/1000 strokes : 30.2
 Tolerance cm³/1000 strokes : 0.5
 Check tolerance cm³/1000S. : 2.2
 Shutoff solenoid Volt : 12

MECHANICAL SHUTOFF

Rated speed rpm : 2200
 Del. quantity cm³/1000 strokes : 1.5
 Tolerance cm³/1000 strokes : 1.5
 Check tolerance cm³/1000S. : 1.5

Shutoff solenoid Volt : 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 400
 Del. quantity cm³/1000 strokes : 1.5
 Tolerance cm³/1000 strokes : 1.5
 Check tolerance cm³/1000S. : 1.5

CHECKING LOAD-DEPENDENT START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1250
 Del. quantity cm³/1000 strokes : -7.0
 Tolerance cm³/1000 strokes : 3.0
 Check tolerance cm³/1000S. : 3.0
 Shutoff solenoid Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
 Del. quantity cm³/1000 strokes : -1.0
 Tolerance cm³/1000 strokes : 0.1
 Check tolerance cm³/1000S. : 0.1
 Shutoff solenoid Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1250
 Del. quantity cm³/1000 strokes : 5.0
 Tolerance cm³/1000 strokes : 3.0
 Check tolerance cm³/1000S. : 3.0
 Shutoff solenoid Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
Supply pump pressure bar : -1.5
Tolerance hPa : 0.3
Shutoff solenoid Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Tolerance mm : 0.5
Check tolerance mm : 0.6
Shutoff solenoid Volt : 12

EXHAUST-GAS RECIRCULATION

Rated speed rpm : 1000
Del. quantity cm³/1000 strokes : 19.4
Tolerance cm³/1000 strokes : 1.0
Check tolerance cm³/1000S. : 4.0
Shutoff solenoid Volt : 12

START TRANSITION

Rated speed rpm : 350
Del. quantity cm³/1000 strokes : 30.0
Tolerance cm³/1000 strokes : 10.0
Shutoff solenoid Volt : 12

Rated speed rpm : 225
Del. quantity cm³/1000 strokes : 54.0
Tolerance cm³/1000 strokes : 17.0
Shutoff solenoid Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,7
Tolerance mm : ±0,1
Dimension KF mm : 6,0
Tolerance mm : ±0,2
Dimension MS mm : 1,4
Tolerance mm : ±0,2

MICROSWITCH SET

mm : 0,8...3,0
: ARF 12,0

CONTROL LEVER POSITION SET

Control lever position YA mm : 27,8..31,8

Control lever position YB mm : 74,0..85,0

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 24.01.95
Test oil : ISO 4113

Part no. : 0 460 484 057
Pump designation : VE4/8F2300R425-3

Customer-spec. information

Customer : PSA
Motor : XUD9AL - BVA

TEST BENCH REQUIREMENTS

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 0,3
Tolerance mm : $\pm 0,02$
Outlet : A

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250
Setting mm : 3.3
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Setting hPa : 5.1
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 30.2
Tolerance
cm³/1000 strokes : 0.5
Spread
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 5.0
Tolerance
cm³/1000 strokes : 0.5
Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2650
Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity
 cm³/1000 strokes : 55.0
 Tolerance
 cm³/1000 strokes : 13.0
 Shutoff solenoid
 Volt : 12

LOAD-DEPENDENT START OF DELIVERY
SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm³/1000 strokes : -7.0
 Tolerance
 cm³/1000 strokes : 1.0
 Shutoff solenoid
 Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm³/1000 strokes : -0.2
 Tolerance
 cm³/1000 strokes : 0.1
 Shutoff solenoid
 Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm³/1000 strokes : -1.2
 Tolerance
 cm³/1000 strokes : 0.1
 Shutoff solenoid
 Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
 SV travel mm : 7.1
 Tolerance mm : 0.4
 Check
 tolerance mm : 0.7
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 800

SV travel mm : 0.7
 Tolerance mm : 0.4

Check
 tolerance mm : 0.7
 Shutoff solenoid
 Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2200
 Supply pump
 pressure bar : 7.6
 Tolerance hPa : 0.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 500
 Supply pump
 pressure bar : 3.0
 Tolerance hPa : 0.3
 Shutoff solenoid
 Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2200
 Overflow quantity
 ccm/10s : 97.2
 Tolerance
 ccm/10s : 41.6

Check tolerance
 ccm/10s : 55.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 500
 Overflow quantity
 ccm/10s : 63.8
 Tolerance
 ccm/10s : 22.2

Check tolerance
 ccm/10s : 34.7
 Shutoff solenoid
 Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2650
 Del. quantity
 cm³/1000 strokes : 11.0
 Tolerance
 cm³/1000 strokes : 2.0
 Check tolerance
 cm³/1000s. : 4.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2500
 Del. quantity
 cm³/1000 strokes : 22.5

Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 5.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2900
Del. quantity
cm³/1000 strokes : 3.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2200
Del. quantity
cm³/1000 strokes : 33.0
Tolerance
cm³/1000 strokes : 1.0
Check tolerance
cm³/1000S. : 2.2
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 31.3
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 30.2
Tolerance
cm³/1000 strokes : 0.5
Check tolerance
cm³/1000S. : 2.2
Shutoff solenoid
Volt : 12

MECHANICAL SHUTOFF

Rated speed rpm : 2200
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5
Shutoff solenoid
Volt : 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5

CHECKING LOAD-DEPENDENT START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -8.0
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 5.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -1.2
Tolerance
cm³/1000 strokes : 0.1
Check tolerance
cm³/1000S. : 0.1
Shutoff solenoid
Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 5.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
Supply pump pressure bar : -1.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

End of test-specification sheet

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Tolerance mm : 0.5
Check tolerance mm : 0.6
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 350
Del. quantity cm³/1000 strokes : 30.0
Tolerance cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 225
Del. quantity cm³/1000 strokes : 54.0
Tolerance cm³/1000 strokes : 17.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,7
Tolerance mm : ±0,1
Dimension KF mm : 6,0
Tolerance mm : ±0,2
Dimension MS mm : 1,4
Tolerance mm : ±0,2

CONTROL LEVER POSITION SET

Control lever position YA mm : 33,8..37,8

Control lever position YB mm : 63,0..77,0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 24.01.95
Test oil : ISO 4113

Part no. : 0 460 484 064
Pump designation : VE4/8F2300R425-5

Customer-spec. information

Customer : PSA
Motor : XUD9 A-L

TEST BENCH REQUIREMENTS

Overflow restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder assembly : 1 688 901 022

Opening pressure bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 0,3
Tolerance mm : +0,02
Outlet : A

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250
Setting mm : 3.7
Tolerance mm : 0.2
Shutoff solenoid Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Setting hPa : 6.0
Tolerance hPa : 0.3
Shutoff solenoid Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity cm³/1000 strokes : 30.2
Tolerance cm³/1000 strokes : 0.5
Spread cm³/1000 strokes : 2.0
Shutoff solenoid Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 500
Del. quantity cm³/1000 strokes : 4.5
Tolerance cm³/1000 strokes : 0.5
Shutoff solenoid Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2650
Del. quantity cm³/1000 strokes : 11.0
Tolerance cm³/1000 strokes : 2.0
Shutoff solenoid Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity
cm³/1000 strokes : 55.0
Tolerance
cm³/1000 strokes : 13.0
Shutoff solenoid
Volt : 12

LOAD-DEPENDENT START OF DELIVERY
SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -6.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -0.2
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -1.0
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
SV travel mm : 7.1
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 800

SV travel mm : 1.6
Tolerance mm : 0.4

Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2200
Supply pump
pressure bar : 8.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Supply pump
pressure bar : 3.6
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2200
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6

Check tolerance
ccm/10s : 55.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Overflow quantity
ccm/10s : 63.8
Tolerance
ccm/10s : 22.2

Check tolerance
ccm/10s : 34.7
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2650
Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2500
Del. quantity
cm³/1000 strokes : 22.5

Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 5.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2900
Del. quantity
cm³/1000 strokes : 3.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2200
Del. quantity
cm³/1000 strokes : 33.0
Tolerance
cm³/1000 strokes : 1.0
Check tolerance
cm³/1000S. : 2.2
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 31.3
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 30.2
Tolerance
cm³/1000 strokes : 0.5
Check tolerance
cm³/1000S. : 2.2
Shutoff solenoid
Volt : 12

ELECTR. SHUTOFF
CONTROL LEVER, IDLE STOP

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5

CHECKING LOAD-DEPENDENT
START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -8.5
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 5.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -1.0
Tolerance
cm³/1000 strokes : 0.1
Check tolerance
cm³/1000S. : 0.1
Shutoff solenoid
Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 5.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
Supply pump
pressure bar : -1.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Tolerance mm : 0.5
Check
tolerance mm : 0.6

Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 30.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 225
Del. quantity
cm³/1000 strokes : 54.0
Tolerance
cm³/1000 strokes : 17.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,7
Tolerance mm : ±0,1
Dimension KF mm : 6,0
Tolerance mm : ±0,2
Dimension MS mm : 1,4
Tolerance mm : ±0,2

CONTROL LEVER POSITION

SET

Control lever
position YA mm : 28,8..32,8

Control lever
position YB mm : 74,0..85,0

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.11.95
Test oil : ISO 4113

Part no. : 0 460 484 070
Pump designation : VE4/8F2300R425-S

Customer-spec. information

Customer : PSA
Motor : XUD9AY/L3 Cit.ZX

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 080 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 0,3
Tolerance mm : $\pm 0,2$
Outlet : A

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250
Setting mm : 3.5
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Setting hPa : 6.0
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 30.2
Tolerance
cm³/1000 strokes : 0.5
Spread
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

HOUSING-FIXED IDLE SPRING
RESIDUAL QUANTITY SETTING

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 5.0
Tolerance
cm³/1000 strokes : 0.5
Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2650
Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

SET GRADUATED STARTING DELIVERY
CONTROL LEVER, IDLE STOP

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 47.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

LOAD-DEPENDENT START OF DELIVERY
SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -6.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -0.2
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -1.0
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12
Rated speed rpm : 800

SV travel mm : 0.8
Tolerance mm : 0.4

Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2200
Supply pump
pressure bar : 8.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Supply pump
pressure bar : 3.6
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2200
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6

Check tolerance
ccm/10s : 55.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Overflow quantity
ccm/10s : 63.8
Tolerance
ccm/10s : 22.2

Check tolerance
ccm/10s : 34.7
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2650
Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0
Shutoff solenoid
Volt : 12

Rated speed rpm	:	2500	Shutoff solenoid	
Del. quantity			Volt	:
cm ³ /1000 strokes	:	22.5		12
Tolerance				
cm ³ /1000 strokes	:	3.0		
Check tolerance				
cm ³ /1000S.	:	5.0		
Shutoff solenoid				
Volt	:	12		
Rated speed rpm	:	2900		
Del. quantity				
cm ³ /1000 strokes	:	1.5		
Tolerance				
cm ³ /1000 strokes	:	1.5		
Check tolerance				
cm ³ /1000S.	:	1.5		
Shutoff solenoid				
Volt	:	12		
Rated speed rpm	:	2200		
Del. quantity				
cm ³ /1000 strokes	:	33.0		
Tolerance				
cm ³ /1000 strokes	:	1.0		
Check tolerance				
cm ³ /1000S.	:	2.2		
Shutoff solenoid				
Volt	:	12		
Rated speed rpm	:	500		
Del. quantity				
cm ³ /1000 strokes	:	31.3		
Tolerance				
cm ³ /1000 strokes	:	1.5		
Check tolerance				
cm ³ /1000S.	:	3.0		
Shutoff solenoid				
Volt	:	12		
Rated speed rpm	:	1250		
Del. quantity				
cm ³ /1000 strokes	:	30.2		
Tolerance				
cm ³ /1000 strokes	:	0.5		
Check tolerance				
cm ³ /1000S.	:	2.2		
Shutoff solenoid				
Volt	:	12		
MECHANICAL SHUTOFF				
Rated speed rpm	:	2200		
Del. quantity				
cm ³ /1000 strokes	:	1.5		
Tolerance				
cm ³ /1000 strokes	:	1.5		
Check tolerance				
cm ³ /1000S.	:	1.5		
ELECTR. SHUTOFF				
CONTROL LEVER, IDLE STOP				
Rated speed rpm	:	400		
Del. quantity				
cm ³ /1000 strokes	:	1.5		
Tolerance				
cm ³ /1000 strokes	:	1.5		
Check tolerance				
cm ³ /1000S.	:	1.5		
Shutoff solenoid				
Volt	:	12		
CHECKING LOAD-DEPENDENT				
START OF DELIVERY				
DELIVERY DIFFERENCE				
Rated speed rpm	:	1250		
Del. quantity				
cm ³ /1000 strokes	:	-7.0		
Tolerance				
cm ³ /1000 strokes	:	3.0		
Check tolerance				
cm ³ /1000S.	:	3.0		
Shutoff solenoid				
Volt	:	12		
TIMING-DEVICE TRAVEL DIFFERENCE				
Rated speed rpm	:	1250		
Del. quantity				
cm ³ /1000 strokes	:	-1.0		
Tolerance				
cm ³ /1000 strokes	:	0.1		
Check tolerance				
cm ³ /1000S.	:	0.1		
Shutoff solenoid				
Volt	:	12		
DELIVERY DIFFERENCE				
Rated speed rpm	:	1250		
Del. quantity				
cm ³ /1000 strokes	:	5.0		
Tolerance				
cm ³ /1000 strokes	:	3.0		
Check tolerance				
cm ³ /1000S.	:	3.0		
Shutoff solenoid				
Volt	:	12		

PRESSURE DIFFERENCE

Rated speed rpm : 1250
Supply pump pressure bar : -1.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Tolerance mm : 0.5
Check tolerance mm : 0.6
Shutoff solenoid
Volt : 12

EXHAUST-GAS RECIRCULATION

Rated speed rpm : 1000
Del. quantity cm³/1000 strokes : 21.4
Tolerance cm³/1000 strokes : 1.0
Check tolerance cm³/1000S. : 4.0
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 350
Del. quantity cm³/1000 strokes : 30.0
Tolerance cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 225
Del. quantity cm³/1000 strokes : 54.0
Tolerance cm³/1000 strokes : 17.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,7
Tolerance mm : ±0,1
Dimension KF mm : 6,0
Tolerance mm : ±0,2
Dimension MS mm : 1,4
Tolerance mm : ±0,2

MICROSWITCH SET

mm : 0,8..3,0
: ARF 12,0

CONTROL LEVER POSITION SET

Control lever position YA mm : 27,8..31,8
Control lever position YB mm : 74,0..85,0

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.11.95
Test oil : ISO 4113

Part no. : 0 460 484 092
Pump designation : VE4/8F2300R425-9

Customer-spec. information

Customer : PSA
Motor : XUD9A-L BVA
Power KW : 51.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test Lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

M03

Plunger stroke mm : 0,3
Tolerance mm : ±0,02
Outlet : A

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250
Setting mm : 3.3
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Setting hPa : 5.1
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 30.2
Tolerance
cm³/1000 strokes : 0.5
Spread
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 5.0
Tolerance
cm³/1000 strokes : 0.5
Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2650
Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
 Del. quantity cm³/1000 strokes : 55.0
 Tolerance cm³/1000 strokes : 13.0
 Shutoff solenoid Volt : 12

SV travel mm : 0.7
 Tolerance mm : 0.4
 Check tolerance mm : 0.7
 Shutoff solenoid Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2200
 Supply pump pressure bar : 7.6
 Tolerance hPa : 0.3
 Shutoff solenoid Volt : 12

LOAD-DEPENDENT START OF DELIVERY SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1250
 Del. quantity cm³/1000 strokes : -7.0
 Tolerance cm³/1000 strokes : 1.0
 Shutoff solenoid Volt : 12

Rated speed rpm : 500
 Supply pump pressure bar : 3.0
 Tolerance hPa : 0.3
 Shutoff solenoid Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
 Del. quantity cm³/1000 strokes : -0.2
 Tolerance cm³/1000 strokes : 0.1
 Shutoff solenoid Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2200
 Overflow quantity ccm/10s : 97.2
 Tolerance ccm/10s : 41.6
 Check tolerance ccm/10s : 55.5
 Shutoff solenoid Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
 Del. quantity cm³/1000 strokes : -1.2
 Tolerance cm³/1000 strokes : 0.1
 Shutoff solenoid Volt : 12

Rated speed rpm : 500
 Overflow quantity ccm/10s : 63.8
 Tolerance ccm/10s : 22.2
 Check tolerance ccm/10s : 34.7
 Shutoff solenoid Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
 SV travel mm : 7.1
 Tolerance mm : 0.4
 Check tolerance mm : 0.7
 Shutoff solenoid Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 800

Rated speed rpm : 2650
 Del. quantity cm³/1000 strokes : 11.0
 Tolerance cm³/1000 strokes : 2.0
 Check tolerance cm³/1000s. : 4.0
 Shutoff solenoid Volt : 12

Rated speed rpm	:	2500	Shutoff solenoid		
Del. quantity			Volt	:	12
cm ³ /1000 strokes	:	22.5			
Tolerance					
cm ³ /1000 strokes	:	3.0			
Check tolerance					
cm ³ /1000S.	:	5.0			
Shutoff solenoid					
Volt	:	12			
Rated speed rpm	:	2900			
Del. quantity					
cm ³ /1000 strokes	:	3.0			
Tolerance					
cm ³ /1000 strokes	:	3.0			
Check tolerance					
cm ³ /1000S.	:	3.0			
Shutoff solenoid					
Volt	:	12			
Rated speed rpm	:	2200			
Del. quantity					
cm ³ /1000 strokes	:	33.0			
Tolerance					
cm ³ /1000 strokes	:	1.0			
Check tolerance					
cm ³ /1000S.	:	2.2			
Shutoff solenoid					
Volt	:	12			
Rated speed rpm	:	500			
Del. quantity					
cm ³ /1000 strokes	:	31.3			
Tolerance					
cm ³ /1000 strokes	:	1.5			
Check tolerance					
cm ³ /1000S.	:	3.0			
Shutoff solenoid					
Volt	:	12			
Rated speed rpm	:	1250			
Del. quantity					
cm ³ /1000 strokes	:	30.2			
Tolerance					
cm ³ /1000 strokes	:	0.5			
Check tolerance					
cm ³ /1000S.	:	2.2			
Shutoff solenoid					
Volt	:	12			
<hr/>					
MECHANICAL SHUTOFF					
Rated speed rpm	:	2200			
Del. quantity					
cm ³ /1000 strokes	:	1.5			
Tolerance					
cm ³ /1000 strokes	:	1.5			
Check tolerance					
cm ³ /1000S.	:	1.5			
ELECTR. SHUTOFF					
CONTROL LEVER, IDLE STOP					
Rated speed rpm	:	400			
Del. quantity					
cm ³ /1000 strokes	:	1.5			
Tolerance					
cm ³ /1000 strokes	:	1.5			
Check tolerance					
cm ³ /1000S.	:	1.5			
FULL-LOAD STOP CONTROL LEVER					
Rated speed rpm	:	400			
Del. quantity					
cm ³ /1000 strokes	:	1.5			
Tolerance					
cm ³ /1000 strokes	:	1.5			
Check tolerance					
cm ³ /1000S.	:	1.5			
CHECKING LOAD-DEPENDENT					
START OF DELIVERY					
DELIVERY DIFFERENCE					
Rated speed rpm	:	1250			
Del. quantity					
cm ³ /1000 strokes	:	-8.0			
Tolerance					
cm ³ /1000 strokes	:	5.0			
Check tolerance					
cm ³ /1000S.	:	5.0			
Shutoff solenoid					
Volt	:	12			
TIMING-DEVICE TRAVEL DIFFERENCE					
Rated speed rpm	:	1250			
Del. quantity					
cm ³ /1000 strokes	:	-1.2			
Tolerance					
cm ³ /1000 strokes	:	0.1			
Check tolerance					
cm ³ /1000S.	:	0.1			
Shutoff solenoid					
Volt	:	12			
DELIVERY DIFFERENCE					
Rated speed rpm	:	1250			

Del. quantity
cm³/1000 strokes : 5.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
Supply pump
pressure bar : -1.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Tolerance mm : 0.5
Check
tolerance mm : 0.6
Shutoff solenoid
Volt : 12

EXHAUST-GAS RECIRCULATION

Del. quantity
cm³/1000 strokes : 10.7

START TRANSITION

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 30.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 225
Del. quantity
cm³/1000 strokes : 54.0
Tolerance
cm³/1000 strokes : 17.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,7
Tolerance mm : ±0,1
Dimension KF mm : 6,0
Tolerance mm : ±0,2
Dimension MS mm : 1,4

Tolerance mm : ±0,2
MICROSWITCH
SET
mm : 0,8...3,0
: 10,7

CONTROL LEVER POSITION SET

Control lever
position YA mm : 33,8..37,8
Control lever
position YB mm : 63,0..77,0

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.11.95
Test oil : ISO 4113

Part no. : 0 460 484 093
Pump designation : VE4/8F2300R425-0

Customer-spec. information

Customer : PSA
Motor : XUD9AY-L3 Cit.ZX
Power KW : 51.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 0,3
Tolerance mm : ±0,02
Outlet : A

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250
Setting mm : 3.5
Tolerance mm : 0.2
Shutoff solenoid Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Setting hPa : 6.0
Tolerance hPa : 0.3
Shutoff solenoid Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 30.2
Tolerance
cm³/1000 strokes : 0.5
Spread
cm³/1000 strokes : 2.0
Shutoff solenoid Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 5.0
Tolerance
cm³/1000 strokes : 0.5
Shutoff solenoid Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2650
Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : 2.0
Shutoff solenoid Volt : 12

SET GRADUATED STARTING DELIVERY
CONTROL LEVER, IDLE STOP

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 47.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

LOAD-DEPENDENT START OF DELIVERY
SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -6.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -0.2
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -1.0
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12
Rated speed rpm : 800

SV travel mm : 0.8
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2200
Supply pump
pressure bar : 8.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Supply pump
pressure bar : 3.6
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2200
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6

Check tolerance
ccm/10s : 55.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Overflow quantity
ccm/10s : 63.8
Tolerance
ccm/10s : 22.2

Check tolerance
ccm/10s : 34.7
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2650
Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000s. : 4.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2500
 Del. quantity
 cm3/1000 strokes : 22.5
 Tolerance
 cm3/1000 strokes : 3.0
 Check tolerance
 cm3/1000S. : 5.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2900
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2200
 Del. quantity
 cm3/1000 strokes : 33.0
 Tolerance
 cm3/1000 strokes : 1.0
 Check tolerance
 cm3/1000S. : 2.2
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 500
 Del. quantity
 cm3/1000 strokes : 31.3
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 3.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : 30.2
 Tolerance
 cm3/1000 strokes : 0.5
 Check tolerance
 cm3/1000S. : 2.2
 Shutoff solenoid
 Volt : 12

MECHANICAL SHUTOFF

Rated speed rpm : 2200
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5

Shutoff solenoid
 Volt : 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 400
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5

CHECKING LOAD-DEPENDENT START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : -7.0
 Tolerance
 cm3/1000 strokes : 3.0
 Check tolerance
 cm3/1000S. : 3.0
 Shutoff solenoid
 Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : -1.0
 Tolerance
 cm3/1000 strokes : 0.1
 Check tolerance
 cm3/1000S. : 0.1
 Shutoff solenoid
 Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : 5.0
 Tolerance
 cm3/1000 strokes : 3.0
 Check tolerance
 cm3/1000S. : 3.0
 Shutoff solenoid
 Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
Supply pump pressure bar : -1,5
Tolerance hPa : 0,3
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Tolerance mm : 0,5
Check tolerance mm : 0,6
Shutoff solenoid
Volt : 12

EXHAUST-GAS RECIRCULATION

Rated speed rpm : 1000
Del. quantity cm³/1000 strokes : 21,4
Tolerance cm³/1000 strokes : 1,0
Check tolerance cm³/1000S. : 4,0
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 350
Del. quantity cm³/1000 strokes : 30,0
Tolerance cm³/1000 strokes : 10,0
Shutoff solenoid
Volt : 12

Rated speed rpm : 225
Del. quantity cm³/1000 strokes : 54,0
Tolerance cm³/1000 strokes : 17,0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,7
Tolerance mm : ±0,1
Dimension KF mm : 6,0
Tolerance mm : ±0,2
Dimension MS mm : 1,4
Tolerance mm : ±0,2

MICROSWITCH SET

mm : 0,8...3,0
: ARF 12,0

CONTROL LEVER POSITION SET

Control lever position YA mm : 27,8..31,8

Control lever position YB mm : 74,0..85,0

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.10.93
Test oil : ISO 4113

Part no. : 0 460 494 279
Pump designation : VE4/9F2300R426

Customer-spec. information

Customer : PSA
Motor : XUD 9/Y-N2 (1.9L)

TEST BENCH REQUIREMENTS

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test Lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 0,3
Tolerance mm : +0,02
Outlet : B

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm : 4.2
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250

Setting hPa : 5.2
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 28.5
Tolerance
cm³/1000 strokes : 0.5
Spread
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 3.0
Tolerance
cm³/1000 strokes : 0.5
Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2440
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity
 cm³/1000 strokes : 59.0
 Tolerance
 cm³/1000 strokes : 15.0
 Shutoff solenoid
 Volt : 12

LOAD-DEPENDENT START OF DELIVERY
SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm³/1000 strokes : -5.5
 Tolerance
 cm³/1000 strokes : 1.0
 Shutoff solenoid
 Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm³/1000 strokes : -0.2
 Tolerance
 cm³/1000 strokes : 0.1
 Shutoff solenoid
 Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm³/1000 strokes : -0.8
 Tolerance
 cm³/1000 strokes : 0.1
 Shutoff solenoid
 Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
 SV travel mm : 8.0
 Tolerance mm : 0.4
 Check
 tolerance mm : 0.7
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 800

SV travel mm : 1.9
 Tolerance mm : 0.4

Check
 tolerance mm : 0.7
 Shutoff solenoid
 Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2250
 Supply pump
 pressure bar : 7.9
 Tolerance hPa : 0.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 500
 Supply pump
 pressure bar : 3.1
 Tolerance hPa : 0.3
 Shutoff solenoid
 Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2250
 Overflow quantity
 ccm/10s : 97.2
 Tolerance
 ccm/10s : 41.6

Check tolerance
 ccm/10s : 55.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 500
 Overflow quantity
 ccm/10s : 62.5
 Tolerance
 ccm/10s : 20.8

Check tolerance
 ccm/10s : 34.7
 Shutoff solenoid
 Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2440
 Del. quantity
 cm³/1000 strokes : 23.0
 Tolerance
 cm³/1000 strokes : 2.0
 Check tolerance
 cm³/1000s. : 4.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2540
 Del. quantity
 cm³/1000 strokes : 13.0

Check tolerance	
cm ³ /1000S.	: 5.0
Shutoff solenoid	
Volt	: 12
Rated speed rpm	: 2750
Del. quantity	
cm ³ /1000 strokes	: 3.0
Tolerance	
cm ³ /1000 strokes	: 3.0
Check tolerance	
cm ³ /1000S.	: 3.0
Shutoff solenoid	
Volt	: 12
Rated speed rpm	: 2250
Del. quantity	
cm ³ /1000 strokes	: 31.0
Tolerance	
cm ³ /1000 strokes	: 1.0
Check tolerance	
cm ³ /1000S.	: 2.2
Shutoff solenoid	
Volt	: 12
Rated speed rpm	: 500
Del. quantity	
cm ³ /1000 strokes	: 30.0
Tolerance	
cm ³ /1000 strokes	: 1.5
Check tolerance	
cm ³ /1000S.	: 3.0
Shutoff solenoid	
Volt	: 12
Rated speed rpm	: 1250
Del. quantity	
cm ³ /1000 strokes	: 28.5
Tolerance	
cm ³ /1000 strokes	: 0.5
Check tolerance	
cm ³ /1000S.	: 2.2
Shutoff solenoid	
Volt	: 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm	: 375
Del. quantity	
cm ³ /1000 strokes	: 1.5
Tolerance	
cm ³ /1000 strokes	: 1.5
Check tolerance	
cm ³ /1000S.	: 1.5

CHECKING LOAD-DEPENDENT START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm	: 1250
Del. quantity	
cm ³ /1000 strokes	: -8.0
Tolerance	
cm ³ /1000 strokes	: 2.0
Check tolerance	
cm ³ /1000S.	: 5.0
Shutoff solenoid	
Volt	: 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm	: 1250
Del. quantity	
cm ³ /1000 strokes	: -0.8
Tolerance	
cm ³ /1000 strokes	: 0.1
Check tolerance	
cm ³ /1000S.	: 0.1
Shutoff solenoid	
Volt	: 12

DELIVERY DIFFERENCE

Rated speed rpm	: 1250
Del. quantity	
cm ³ /1000 strokes	: 5.0
Tolerance	
cm ³ /1000 strokes	: 3.0
Check tolerance	
cm ³ /1000S.	: 3.0
Shutoff solenoid	
Volt	: 12

PRESSURE DIFFERENCE

Rated speed rpm	: 1250
Supply pump	
pressure bar	: -0.8
Tolerance hPa	: 0.2
Shutoff solenoid	
Volt	: 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm	: 1250
Tolerance mm	: 0.2
Check	
tolerance mm	: 0.6
Shutoff solenoid	
Volt	: 12

EXHAUST-GAS RECIRCULATION

Rated speed rpm : 1125
Del. quantity cm³/1000 strokes : 18.0
Tolerance cm³/1000 strokes : 1.0
Check tolerance cm³/1000S. : 4.0
Shutoff solenoid Volt : 12

Del. quantity cm³/1000 strokes : 10.8

START TRANSITION

Rated speed rpm : 350
Del. quantity cm³/1000 strokes : 25.0
Tolerance cm³/1000 strokes : 10.0
Shutoff solenoid Volt : 12

Rated speed rpm : 225
Del. quantity cm³/1000 strokes : 63.0
Tolerance cm³/1000 strokes : 17.0
Shutoff solenoid Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : $\pm 0,1$
Dimension KF mm : 5,8
Tolerance mm : $\pm 0,2$
Dimension MS mm : 1,4
Tolerance mm : $\pm 0,2$

MICROSWITCH SET

mm : 1=ARF 8,0
: 2=ARF 10,8

CONTROL LEVER POSITION SET

Control lever position YA mm : 18,8..22,8

Control lever position YB mm : 82,0..96,0

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.01.94
Test oil : ISO 4113

Part no. : 0 460 494 342
Pump designation : VE4/9F2250R445-?

Customer-spec. information

Customer : PSA
Motor : XUD 9 TE-L, TF-L

TEST BENCH REQUIREMENTS

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 0,3
Tolerance mm : +0,02
Outlet : A

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250
Aneroid pressure hPa : 1000
Setting mm : 3.6
Tolerance mm : 0.2
Shutoff solenoid Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Aneroid pressure hPa : 1000
Setting hPa : 5.6
Tolerance hPa : 0.3
Shutoff solenoid Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1250
Aneroid pressure hPa : 1000
Del. quantity cm³/1000 strokes : 54.0
Tolerance cm³/1000 strokes : 0.5
Spread cm³/1000 strokes : 2.0
Check tolerance cm³/1000S. : 3.0
Shutoff solenoid Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 500
Del. quantity cm³/1000 strokes : 37.0
Tolerance cm³/1000 strokes : 0.5
Shutoff solenoid Volt : 12
Check tolerance cm³/1000S. : 3.0

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 490

Del. quantity cm ³ /1000 strokes	: 8.5	Shutoff solenoid Volt	: 12
Tolerance cm ³ /1000 strokes	: 0.5	TIMING-DEVICE TRAVEL DIFFERENCE	
Shutoff solenoid Volt	: 12	Rated speed rpm	: 1250
FULL-LOAD SPEED REGULATION			
Rated speed rpm	: 2575	Del. quantity cm ³ /1000 strokes	: -1.0
Pressure hPa	: 1000	Tolerance cm ³ /1000 strokes	: 0.1
Del. quantity cm ³ /1000 strokes	: 14.0	Shutoff solenoid Volt	: 12
Tolerance cm ³ /1000 strokes	: 2.0	INJECTION-PUMP TEST SPECIFICATIONS	
Shutoff solenoid Volt	: 12	TIMING DEVICE CHARACTERISTIC	
STARTING FUEL DELIVERY			
Rated speed rpm	: 150	Rated speed rpm	: 2000
Del. quantity cm ³ /1000 strokes	: 52.0	Aneroid pressure hPa	: 1000
Tolerance cm ³ /1000 strokes	: 15.0	SV travel mm	: 6.5
Shutoff solenoid Volt	: 12	Tolerance mm	: 0.4
SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP		Check tolerance mm	: 0.7
Rated speed rpm	: 200	Shutoff solenoid Volt	: 12
Del. quantity cm ³ /1000 strokes	: 53.0	Rated speed rpm	
Tolerance cm ³ /1000 strokes	: 3.0	Aneroid pressure hPa	: 1000
Shutoff solenoid Volt	: 12	SV travel mm	: 1.5
LOAD-DEPENDENT START OF DELIVERY SETTING		Tolerance mm	: 0.4
DELIVERY DIFFERENCE		Check tolerance mm	: 0.7
Rated speed rpm	: 1250	Shutoff solenoid Volt	: 12
Del. quantity cm ³ /1000 strokes	: -10.0	SUPPLY PUMP PRESSURE CHARACTERISTIC	
Tolerance cm ³ /1000 strokes	: 1.0	Rated speed rpm	: 2000
Shutoff solenoid Volt	: 12	Aneroid pressure hPa	: 1000
PRESSURE DIFFERENCE		Supply pump pressure bar	: 7.5
Rated speed rpm	: 1250	Tolerance hPa	: 0.3
Del. quantity cm ³ /1000 strokes	: -0.2	Shutoff solenoid Volt	: 12
Tolerance cm ³ /1000 strokes	: 0.1	Rated speed rpm	
		Aneroid pressure hPa	: 1000
		Supply pump pressure bar	: 4.3
		Tolerance hPa	: 0.3
		Shutoff solenoid Volt	: 12

OVERFLOW QUANTITY		Tolerance cm ³ /1000 strokes : 3.0
Rated speed rpm	: 2150	Check tolerance cm ³ /1000S. : 3.0
Aneroid pressure hPa	: 1000	Shutoff solenoid Volt : 12
Overflow quantity ccm/10s	: 97.2	Rated speed rpm : 750
Tolerance ccm/10s	: 41.6	Aneroid pressure hPa : 350
Check tolerance ccm/10s	: 41.6	Del. quantity cm ³ /1000 strokes : 46.0
Shutoff solenoid Volt	: 12	Tolerance cm ³ /1000 strokes : 0.5
Rated speed rpm	: 500	Check tolerance cm ³ /1000S. : 3.0
Aneroid pressure hPa	: 1000	Shutoff solenoid Volt : 12
Overflow quantity ccm/10s	: 62.5	Rated speed rpm : 2150
Tolerance ccm/10s	: 20.8	Aneroid pressure hPa : 1000
Check tolerance ccm/10s	: 20.8	Del. quantity cm ³ /1000 strokes : 50.1
Shutoff solenoid Volt	: 12	Tolerance cm ³ /1000 strokes : 1.0
DELIVERY AND BREAKAWAY CHARACTERISTIC		Check tolerance cm ³ /1000S. : 2.2
Rated speed rpm	: 2575	Shutoff solenoid Volt : 12
Aneroid pressure hPa	: 1000	Rated speed rpm : 2000
Del. quantity cm ³ /1000 strokes	: 14.0	Aneroid pressure hPa : 1000
Tolerance cm ³ /1000 strokes	: 2.0	Del. quantity cm ³ /1000 strokes : 52.0
Check tolerance cm ³ /1000S.	: 4.0	Tolerance cm ³ /1000 strokes : 1.0
Shutoff solenoid Volt	: 12	Check tolerance cm ³ /1000S. : 2.2
Rated speed rpm	: 2375	Shutoff solenoid Volt : 12
Aneroid pressure hPa	: 1000	Rated speed rpm : 500
Del. quantity cm ³ /1000 strokes	: 39.0	Aneroid pressure hPa : 1000
Tolerance cm ³ /1000 strokes	: 5.0	Del. quantity cm ³ /1000 strokes : 48.3
Check tolerance cm ³ /1000S.	: 6.0	Tolerance cm ³ /1000 strokes : 1.5
Shutoff solenoid Volt	: 12	Check tolerance cm ³ /1000S. : 3.0
Rated speed rpm	: 2750	Shutoff solenoid Volt : 12
Aneroid pressure hPa	: 1000	Rated speed rpm : 1250
Del. quantity cm ³ /1000 strokes	: 3.0	Aneroid pressure hPa : 1000
		Del. quantity cm ³ /1000 strokes : 54.0

Tolerance
 cm³/1000 strokes : 0.5
 Check tolerance
 cm³/1000S. : 2.2
 Shutoff solenoid
 Volt : 12

MECHANICAL SHUTOFF

Rated speed rpm : 2000
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 1.5
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000S. : 1.5
 Shutoff solenoid
 Volt : 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 400
 Del. quantity
 cm³/1000 strokes : 1.5
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000S. : 1.5

CHECKING LOAD-DEPENDENT START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm³/1000 strokes : -13.0
 Tolerance
 cm³/1000 strokes : 2.0
 Check tolerance
 cm³/1000S. : 5.0
 Shutoff solenoid
 Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm³/1000 strokes : -1.0

Tolerance
 cm³/1000 strokes : 0.1
 Check tolerance
 cm³/1000S. : 0.1
 Shutoff solenoid
 Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm³/1000 strokes : 5.0
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 3.0
 Shutoff solenoid
 Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
 Supply pump
 pressure bar : -1.1
 Tolerance hPa : 0.2
 Shutoff solenoid
 Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
 Tolerance mm : 0.2
 Check
 tolerance mm : 0.7
 Shutoff solenoid
 Volt : 12

START TRANSITION

Rated speed rpm : 380
 Del. quantity
 cm³/1000 strokes : 35.0
 Tolerance
 cm³/1000 strokes : 10.0
 Shutoff solenoid
 Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
 Tolerance mm : ±0,1
 Dimension KF mm : 6,0
 Tolerance mm : ±0,2
 Dimension MS mm : 1,3
 Tolerance mm : ±0,2

End of test-specification sheet

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BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.06.94
Test oil : ISO 4113

Part no. : 0 460 494 370
Pump designation : VE4/9F2250R445-?

Customer-spec. information

Customer : PSA
Motor : XUD 9 TE-L; P.306

TEST BENCH REQUIREMENTS

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 0,3
Tolerance mm : +0,02
Outlet : A

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1500
Aneroid pressure hPa : 1000
Setting mm : 4.1
Tolerance mm : 0.2
Shutoff solenoid Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1500
Aneroid pressure hPa : 1000
Setting hPa : 5.7
Tolerance hPa : 0.3
Shutoff solenoid Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1250
Aneroid pressure hPa : 1000
Del. quantity cm³/1000 strokes : 54.5
Tolerance cm³/1000 strokes : 0.5
Spread cm³/1000 strokes : 2.0
Check tolerance cm³/1000S. : 3.0
Shutoff solenoid Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 500
Del. quantity cm³/1000 strokes : 37.0
Tolerance cm³/1000 strokes : 0.5
Shutoff solenoid Volt : 12
Check tolerance cm³/1000S. : 3.0

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 490

Del. quantity
 cm³/1000 strokes : 8.5
 Tolerance
 cm³/1000 strokes : 0.5
 Shutoff solenoid
 Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2575
 Pressure hPa : 1000
 Del. quantity
 cm³/1000 strokes : 14.0
 Tolerance
 cm³/1000 strokes : 2.0
 Shutoff solenoid
 Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 150
 Del. quantity
 cm³/1000 strokes : 52.0
 Tolerance
 cm³/1000 strokes : 15.0
 Shutoff solenoid
 Volt : 12

SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP

Rated speed rpm : 200
 Del. quantity
 cm³/1000 strokes : 53.0
 Tolerance
 cm³/1000 strokes : 3.0
 Shutoff solenoid
 Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
 Aneroid pressure
 hPa : 1000

SV travel mm : 6.5
 Tolerance mm : 0.4
 Check
 tolerance mm : 0.7
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 900
 Aneroid pressure
 hPa : 1000

SV travel mm : 1.2
 Tolerance mm : 0.4
 Check
 tolerance mm : 0.7
 Shutoff solenoid
 Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2000
 Aneroid pressure
 hPa : 1000
 Supply pump
 pressure bar : 6.8
 Tolerance hPa : 0.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 900
 Aneroid pressure
 hPa : 1000
 Supply pump
 pressure bar : 4.2
 Tolerance hPa : 0.3
 Shutoff solenoid
 Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2150
 Aneroid pressure
 hPa : 1000
 Overflow quantity
 ccm/10s : 97.2
 Tolerance
 ccm/10s : 41.6

Check tolerance
 ccm/10s : 41.6
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 500
 Aneroid pressure
 hPa : 1000
 Overflow quantity
 ccm/10s : 62.5
 Tolerance
 ccm/10s : 20.8

Check tolerance
 ccm/10s : 20.8
 Shutoff solenoid
 Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2575

Aneroid pressure hPa	: 1000	Shutoff solenoid Volt	: 12
Del. quantity cm ³ /1000 strokes	: 14.0	Rated speed rpm	: 2000
Tolerance cm ³ /1000 strokes	: 2.0	Aneroid pressure hPa	: 1000
Check tolerance cm ³ /1000S.	: 4.0	Del. quantity cm ³ /1000 strokes	: 52.0
Shutoff solenoid Volt	: 12	Tolerance cm ³ /1000 strokes	: 1.0
Rated speed rpm	: 2375	Check tolerance cm ³ /1000S.	: 2.2
Aneroid pressure hPa	: 1000	Shutoff solenoid Volt	: 12
Del. quantity cm ³ /1000 strokes	: 39.0	Rated speed rpm	: 500
Tolerance cm ³ /1000 strokes	: 5.0	Aneroid pressure hPa	: 1000
Check tolerance cm ³ /1000S.	: 6.0	Del. quantity cm ³ /1000 strokes	: 48.3
Shutoff solenoid Volt	: 12	Tolerance cm ³ /1000 strokes	: 1.5
Rated speed rpm	: 2750	Check tolerance cm ³ /1000S.	: 3.0
Aneroid pressure hPa	: 1000	Shutoff solenoid Volt	: 12
Del. quantity cm ³ /1000 strokes	: 3.0	Rated speed rpm	: 1250
Tolerance cm ³ /1000 strokes	: 3.0	Aneroid pressure hPa	: 1000
Check tolerance cm ³ /1000S.	: 3.0	Del. quantity cm ³ /1000 strokes	: 54.5
Shutoff solenoid Volt	: 12	Tolerance cm ³ /1000 strokes	: 0.5
Rated speed rpm	: 750	Check tolerance cm ³ /1000S.	: 2.2
Aneroid pressure hPa	: 350	Shutoff solenoid Volt	: 12
LDA/ HBA stroke mm	: 5,9	<hr/>	
Del. quantity cm ³ /1000 strokes	: 46.0	MECHANICAL SHUTOFF	
Tolerance cm ³ /1000 strokes	: 0.5	Rated speed rpm	: 2000
Check tolerance cm ³ /1000S.	: 3.0	Aneroid pressure hPa	: 1000
Shutoff solenoid Volt	: 12	Del. quantity cm ³ /1000 strokes	: 1.5
Rated speed rpm	: 2150	Tolerance cm ³ /1000 strokes	: 1.5
Aneroid pressure hPa	: 1000	Check tolerance cm ³ /1000S.	: 1.5
Del. quantity cm ³ /1000 strokes	: 50.1	Shutoff solenoid Volt	: 12
Tolerance cm ³ /1000 strokes	: 1.0	<hr/>	
Check tolerance cm ³ /1000S.	: 2.2	ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP	
		Rated speed rpm	: 400

Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5

End of test-specification sheet

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5

START TRANSITION

Rated speed rpm : 380
Del. quantity
cm³/1000 strokes : 35.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/
HBA stroke mm : 5,9
Dimension K mm : 3,3
Tolerance mm : +0,1
Dimension KF mm : 6,0
Tolerance mm : +0,2
Dimension MS mm : 1,3
Tolerance mm : +0,2

CONTROL LEVER POSITION SET

Control lever
position YA mm : 28,8..32,8
Control lever
position YB mm : 68,0..82,0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 28.09.95
Test oil : ISO 4113

Part no. : 0 460 494 388
Pump designation : VE4/9F2250R445-1

Customer-spec. information

Customer : PSA
Motor : XUD 9 TE-L; P.306

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1500
Aneroid pressure hPa : 1000
Setting mm : 4.1
Tolerance mm : 0.2
Shutoff solenoid Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1500
Aneroid pressure hPa : 1000
Setting hPa : 5.7
Tolerance hPa : 0.3
Shutoff solenoid Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1250
Aneroid pressure hPa : 1000
Del. quantity cm³/1000 strokes : 54.5
Tolerance cm³/1000 strokes : 0.5
Spread cm³/1000 strokes : 2.0
Check tolerance cm³/1000S. : 3.0
Shutoff solenoid Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 500
Del. quantity cm³/1000 strokes : 37.0
Tolerance cm³/1000 strokes : 0.5
Shutoff solenoid Volt : 12
Check tolerance cm³/1000S. : 3.0

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 490
Del. quantity cm³/1000 strokes : 8.5
Tolerance cm³/1000 strokes : 0.5
Shutoff solenoid Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2575
 Pressure hPa : 1000
 Del. quantity cm³/1000 strokes : 14.0
 Tolerance cm³/1000 strokes : 2.0
 Shutoff solenoid Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 150
 Del. quantity cm³/1000 strokes : 52.0
 Tolerance cm³/1000 strokes : 15.0
 Shutoff solenoid Volt : 12

SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP

Rated speed rpm : 200
 Del. quantity cm³/1000 strokes : 53.0
 Tolerance cm³/1000 strokes : 3.0
 Shutoff solenoid Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
 Aneroid pressure hPa : 1000
 SV travel mm : 6.5
 Tolerance mm : 0.4
 Check tolerance mm : 0.7
 Shutoff solenoid Volt : 12

Rated speed rpm : 900
 Aneroid pressure hPa : 1000
 SV travel mm : 1.2
 Tolerance mm : 0.4
 Check tolerance mm : 0.7

Shutoff solenoid Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2000
 Aneroid pressure hPa : 1000
 Supply pump pressure bar : 6.8
 Tolerance hPa : 0.3
 Shutoff solenoid Volt : 12

Rated speed rpm : 900
 Aneroid pressure hPa : 1000
 Supply pump pressure bar : 4.2
 Tolerance hPa : 0.3
 Shutoff solenoid Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2150
 Aneroid pressure hPa : 1000
 Overflow quantity ccm/10s : 97.2
 Tolerance ccm/10s : 41.6

Check tolerance ccm/10s : 41.6
 Shutoff solenoid Volt : 12

Rated speed rpm : 500
 Aneroid pressure hPa : 1000
 Overflow quantity ccm/10s : 62.5
 Tolerance ccm/10s : 20.8

Check tolerance ccm/10s : 20.8
 Shutoff solenoid Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2575
 Aneroid pressure hPa : 1000
 Del. quantity cm³/1000 strokes : 14.0
 Tolerance cm³/1000 strokes : 2.0

Check tolerance cm³/1000S. : 4.0
Shutoff solenoid Volt : 12

Rated speed rpm : 2375
Aneroid pressure hPa : 1000
Del. quantity cm³/1000 strokes : 39.0
Tolerance cm³/1000 strokes : 5.0
Check tolerance cm³/1000S. : 6.0
Shutoff solenoid Volt : 12

Rated speed rpm : 2750
Aneroid pressure hPa : 1000
Del. quantity cm³/1000 strokes : 3.0
Tolerance cm³/1000 strokes : 3.0
Check tolerance cm³/1000S. : 3.0
Shutoff solenoid Volt : 12

Rated speed rpm : 750
Aneroid pressure hPa : 350
Del. quantity cm³/1000 strokes : 46.0
Tolerance cm³/1000 strokes : 0.5
Check tolerance cm³/1000S. : 3.0
Shutoff solenoid Volt : 12

Rated speed rpm : 2150
Aneroid pressure hPa : 1000
Del. quantity cm³/1000 strokes : 51.0
Tolerance cm³/1000 strokes : 1.0
Check tolerance cm³/1000S. : 2.2
Shutoff solenoid Volt : 12

Rated speed rpm : 2000
Aneroid pressure hPa : 1000
Del. quantity cm³/1000 strokes : 52.0
Tolerance cm³/1000 strokes : 1.0

Check tolerance cm³/1000S. : 2.2
Shutoff solenoid Volt : 12

Rated speed rpm : 500
Aneroid pressure hPa : 1000
Del. quantity cm³/1000 strokes : 48.3
Tolerance cm³/1000 strokes : 1.5
Check tolerance cm³/1000S. : 3.0
Shutoff solenoid Volt : 12

Rated speed rpm : 1250
Aneroid pressure hPa : 1000
Del. quantity cm³/1000 strokes : 54.5
Tolerance cm³/1000 strokes : 0.5
Check tolerance cm³/1000S. : 2.2
Shutoff solenoid Volt : 12

MECHANICAL SHUTOFF

Rated speed rpm : 2000
Aneroid pressure hPa : 1000
Del. quantity cm³/1000 strokes : 1.5
Tolerance cm³/1000 strokes : 1.5
Check tolerance cm³/1000S. : 1.5
Shutoff solenoid Volt : 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 400
Del. quantity cm³/1000 strokes : 1.5
Tolerance cm³/1000 strokes : 1.5
Check tolerance cm³/1000S. : 1.5

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 400

Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000s. : 1.5

START TRANSITION

Rated speed rpm : 380
Del. quantity
cm³/1000 strokes : 35.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : ±0,1
Dimension KF mm : 6,0
Tolerance mm : ±0,2
Dimension MS mm : 1,3
Tolerance mm : ±0,2

CONTROL LEVER POSITION SET

Control lever
position YA mm : 28,8..32,8

Control lever
position YB mm : 68,0..82,0

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.06.95
Test oil : ISO 4113

Part no. : 0 460 494 409
Pump designation : VE4/9F2250R445-F

Customer-spec. information

Customer : PSA
Motor : XUD 9 TF-L
Power KW : 67.0

TEST BENCH REQUIREMENTS**Calibrating-oil**

return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS**INJECTION PUMP SETTING VALUES****TIMING DEVICE TRAVEL**

Rated speed rpm : 1500
Aneroid pressure hPa : 1000
Setting mm : 4.1
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1500
Aneroid pressure hPa : 1000
Setting hPa : 5.7
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1250
Aneroid pressure hPa : 1000
Del. quantity cm³/1000 strokes : 54.5
Tolerance cm³/1000 strokes : 0.5
Spread cm³/1000 strokes : 2.0
Check tolerance cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 500
Del. quantity cm³/1000 strokes : 37.0
Tolerance cm³/1000 strokes : 0.5
Shutoff solenoid
Volt : 12
Check tolerance cm³/1000S. : 3.0

**HOUSING-FIXED IDLE SPRING
RESIDUAL QUANTITY SETTING**

Rated speed rpm : 490
Del. quantity cm³/1000 strokes : 8.5
Tolerance cm³/1000 strokes : 0.5

Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2575
Pressure hPa : 1000
Del. quantity cm³/1000 strokes : 14.0
Tolerance cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 150
Del. quantity cm³/1000 strokes : 52.0
Tolerance cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

SET GRADUATED STARTING DELIVERY
CONTROL LEVER, IDLE STOP

Rated speed rpm : 200
Del. quantity cm³/1000 strokes : 53.0
Tolerance cm³/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
Aneroid pressure hPa : 1000

SV travel mm : 6.5
Tolerance mm : 0.4
Check tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 900
Aneroid pressure hPa : 1000

SV travel mm : 1.2
Tolerance mm : 0.4

Check tolerance mm : 0.7
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2000
Aneroid pressure hPa : 1000
Supply pump pressure bar : 6.8
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 900
Aneroid pressure hPa : 1000
Supply pump pressure bar : 4.2
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2150
Aneroid pressure hPa : 1000
Overflow quantity ccm/10s : 97.2
Tolerance ccm/10s : 41.6

Check tolerance ccm/10s : 41.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Aneroid pressure hPa : 1000
Overflow quantity ccm/10s : 62.5
Tolerance ccm/10s : 20.8

Check tolerance ccm/10s : 20.8
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2575
Aneroid pressure hPa : 1000
Del. quantity cm³/1000 strokes : 14.0

Tolerance		Aneroid pressure	
cm ³ /1000 strokes	: 2.0	hPa	: 1000
Check tolerance		Del. quantity	
cm ³ /1000S.	: 4.0	cm ³ /1000 strokes	: 52.0
Shutoff solenoid		Tolerance	
Volt	: 12	cm ³ /1000 strokes	: 1.0
Rated speed rpm	: 2375	Check tolerance	
Aneroid pressure		cm ³ /1000S.	: 2.2
hPa	: 1000	Shutoff solenoid	
Del. quantity		Volt	: 12
cm ³ /1000 strokes	: 39.0	Rated speed rpm	: 500
Tolerance		Aneroid pressure	
cm ³ /1000 strokes	: 5.0	hPa	: 1000
Check tolerance		Del. quantity	
cm ³ /1000S.	: 6.0	cm ³ /1000 strokes	: 48.3
Shutoff solenoid		Tolerance	
Volt	: 12	cm ³ /1000 strokes	: 1.5
Rated speed rpm	: 2750	Check tolerance	
Aneroid pressure		cm ³ /1000S.	: 3.0
hPa	: 1000	Shutoff solenoid	
Del. quantity		Volt	: 12
cm ³ /1000 strokes	: 3.0	Rated speed rpm	: 1250
Tolerance		Aneroid pressure	
cm ³ /1000 strokes	: 3.0	hPa	: 1000
Check tolerance		Del. quantity	
cm ³ /1000S.	: 3.0	cm ³ /1000 strokes	: 54.5
Shutoff solenoid		Tolerance	
Volt	: 12	cm ³ /1000 strokes	: 0.5
Rated speed rpm	: 750	Check tolerance	
Aneroid pressure		cm ³ /1000S.	: 2.2
hPa	: 350	Shutoff solenoid	
LDA/		Volt	: 12
HBA stroke mm	: 5.9	MECHANICAL SHUTOFF	
Del. quantity		Rated speed rpm	: 2000
cm ³ /1000 strokes	: 46.0	Aneroid pressure	
Tolerance		hPa	: 1000
cm ³ /1000 strokes	: 0.5	Del. quantity	
Check tolerance		cm ³ /1000 strokes	: 1.5
cm ³ /1000S.	: 3.0	Tolerance	
Shutoff solenoid		cm ³ /1000 strokes	: 1.5
Volt	: 12	Check tolerance	
Rated speed rpm	: 2150	cm ³ /1000S.	: 1.5
Aneroid pressure		Shutoff solenoid	
hPa	: 1000	Volt	: 12
Del. quantity		ELECTR. SHUTOFF	
cm ³ /1000 strokes	: 50.1	CONTROL LEVER, IDLE STOP	
Tolerance		Rated speed rpm	: 400
cm ³ /1000 strokes	: 1.0	Del. quantity	
Check tolerance		cm ³ /1000 strokes	: 1.5
cm ³ /1000S.	: 2.2	Tolerance	
Shutoff solenoid		cm ³ /1000 strokes	: 1.5
Volt	: 12		
Rated speed rpm	: 2000		

Check tolerance
cm³/1000s. : 1.5

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000s. : 1.5

START TRANSITION

Rated speed rpm : 380
Del. quantity
cm³/1000 strokes : 35.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/
HBA stroke mm : 5.9
Dimension K mm : 3,3
Tolerance mm : ±0,1
Dimension KF mm : 6,0
Tolerance mm : ±0,2
Dimension MS mm : 1,3
Tolerance mm : ±0,2

CONTROL LEVER POSITION
SET

Control lever
position YA mm : 25,8..29,8

Control lever
position YB mm : 68,0..82,0

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.06.95
Test oil : ISO 4113

Part no. : 0 460 494 410
Pump designation : VE4/9F2250R445-A

Customer-spec. information

Customer : PSA
Motor : XUD 9 TF/L
Power KW : 67.0

TEST BENCH REQUIREMENTS

Calibrating-oil return
temperature °C : 45
Tolerance °C : 1

Overflow restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder assembly : 1 688 901 022

Opening pressure bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS**INJECTION PUMP SETTING VALUES****TIMING DEVICE TRAVEL**

Rated speed rpm : 1500
Aneroid pressure hPa : 1000
Setting mm : 4.1
Tolerance mm : 0.2
Shutoff solenoid Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1500
Aneroid pressure hPa : 1000
Setting hPa : 5.7
Tolerance hPa : 0.3
Shutoff solenoid Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1250
Aneroid pressure hPa : 1000
Del. quantity cm³/1000 strokes : 54.5
Tolerance cm³/1000 strokes : 0.5
Spread cm³/1000 strokes : 2.0
Check tolerance cm³/1000S. : 3.0
Shutoff solenoid Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 500
Del. quantity cm³/1000 strokes : 37.0
Tolerance cm³/1000 strokes : 0.5
Shutoff solenoid Volt : 12
Check tolerance cm³/1000S. : 3.0

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 490
Del. quantity cm³/1000 strokes : 8.5
Tolerance cm³/1000 strokes : 0.5

Shutoff solenoid Volt	: 12	Check tolerance mm Shutoff solenoid Volt	: 0.7 12
FULL-LOAD SPEED REGULATION			
Rated speed rpm	: 2575	SUPPLY PUMP PRESSURE CHARACTERISTIC	
Pressure hPa	: 1000	Rated speed rpm	: 2000
Del. quantity cm ³ /1000 strokes	: 14.0	Aneroid pressure hPa	: 1000
Tolerance cm ³ /1000 strokes	: 2.0	Supply pump pressure bar	: 6.8
Shutoff solenoid Volt	: 12	Tolerance hPa	: 0.3
STARTING FUEL DELIVERY			
Rated speed rpm	: 150	Shutoff solenoid Volt	: 12
Del. quantity cm ³ /1000 strokes	: 52.0	Rated speed rpm	: 900
Tolerance cm ³ /1000 strokes	: 15.0	Aneroid pressure hPa	: 1000
Shutoff solenoid Volt	: 12	Supply pump pressure bar	: 4.2
SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP			
Rated speed rpm	: 200	Tolerance hPa	: 0.3
Del. quantity cm ³ /1000 strokes	: 53.0	Shutoff solenoid Volt	: 12
Tolerance cm ³ /1000 strokes	: 3.0	OVERFLOW QUANTITY	
Shutoff solenoid Volt	: 12	Rated speed rpm	: 2150
<hr/> INJECTION-PUMP TEST SPECIFICATIONS			
TIMING DEVICE CHARACTERISTIC			
Rated speed rpm	: 2000	Aneroid pressure hPa	: 1000
Aneroid pressure hPa	: 1000	Overflow quantity ccm/10s	: 62.5
SV travel mm	: 6.5	Tolerance ccm/10s	: 20.8
Tolerance mm	: 0.4	Check tolerance ccm/10s	: 20.8
Check tolerance mm	: 0.7	Shutoff solenoid Volt	: 12
Shutoff solenoid Volt	: 12	DELIVERY AND BREAKAWAY CHARACTERISTIC	
Rated speed rpm	: 900	Rated speed rpm	: 2575
Aneroid pressure hPa	: 1000	Aneroid pressure hPa	: 1000
SV travel mm	: 1.2	Del. quantity cm ³ /1000 strokes	: 14.0
Tolerance mm	: 0.4		

Tolerance
 cm3/1000 strokes : 2.0
 Check tolerance
 cm3/1000S. : 4.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2375
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 39.0
 Tolerance
 cm3/1000 strokes : 5.0
 Check tolerance
 cm3/1000S. : 6.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2750
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 3.0
 Tolerance
 cm3/1000 strokes : 3.0
 Check tolerance
 cm3/1000S. : 3.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 750
 Aneroid pressure
 hPa : 350
 Del. quantity
 cm3/1000 strokes : 46.0
 Tolerance
 cm3/1000 strokes : 0.5
 Check tolerance
 cm3/1000S. : 3.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2150
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 50.1
 Tolerance
 cm3/1000 strokes : 1.0
 Check tolerance
 cm3/1000S. : 2.2
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2000
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 52.0

Tolerance
 cm3/1000 strokes : 1.0
 Check tolerance
 cm3/1000S. : 2.2
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 500
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 48.3
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 3.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1250
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 54.5
 Tolerance
 cm3/1000 strokes : 0.5
 Check tolerance
 cm3/1000S. : 2.2
 Shutoff solenoid
 Volt : 12

MECHANICAL SHUTOFF

Rated speed rpm : 2000
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5
 Shutoff solenoid
 Volt : 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 400
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 400
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5

START TRANSITION

Rated speed rpm : 380
Del. quantity
cm3/1000 strokes : 35.0
Tolerance
cm3/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : $\pm 0,1$
Dimension KF mm : 6,0
Tolerance mm : $\pm 0,2$
Dimension MS mm : 1,3
Tolerance mm : $\pm 0,2$

CONTROL LEVER POSITION SET

Control lever
position YA mm : 25,8..29,8
Control lever
position YB mm : 68,082,0

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.06.95
Test oil : ISO 4113

Part no. : 0 460 494 411
Pump designation : VE4/9F2250R445-7

Customer-spec. information

Customer : PSA
Motor : XUD 9 TF/L
Power KW : 67.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1500
Aneroid pressure hPa : 1000
Setting mm : 4.1
Tolerance mm : 0.2
Shutoff solenoid Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1500
Aneroid pressure hPa : 1000
Setting hPa : 5.7
Tolerance hPa : 0.3
Shutoff solenoid Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1250
Aneroid pressure hPa : 1000
Del. quantity cm³/1000 strokes : 54.5
Tolerance cm³/1000 strokes : 0.5
Spread cm³/1000 strokes : 2.0
Check tolerance cm³/1000S. : 3.0
Shutoff solenoid Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 500
Del. quantity cm³/1000 strokes : 37.0
Tolerance cm³/1000 strokes : 0.5
Shutoff solenoid Volt : 12
Check tolerance cm³/1000S. : 3.0

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 490
Del. quantity cm³/1000 strokes : 8.5
Tolerance cm³/1000 strokes : 0.5

Shutoff solenoid		Check	
Volt	: 12	tolerance mm	: 0.7
FULL-LOAD SPEED REGULATION			
Rated speed rpm	: 2575	Shutoff solenoid	
Pressure hPa	: 1000	Volt	: 12
Del. quantity		SUPPLY PUMP PRESSURE CHARACTERISTIC	
cm ³ /1000 strokes	: 14.0	Rated speed rpm	: 2000
Tolerance		Aneroid pressure	
cm ³ /1000 strokes	: 2.0	hPa	: 1000
Shutoff solenoid		Supply pump	
Volt	: 12	pressure bar	: 6.8
STARTING FUEL DELIVERY		Tolerance hPa	: 0.3
Rated speed rpm	: 150	Shutoff solenoid	
Del. quantity		Volt	: 12
cm ³ /1000 strokes	: 52.0	Rated speed rpm	: 900
Tolerance		Aneroid pressure	
cm ³ /1000 strokes	: 15.0	hPa	: 1000
Shutoff solenoid		Supply pump	
Volt	: 12	pressure bar	: 4.2
SET GRADUATED STARTING DELIVERY		Tolerance hPa	: 0.3
CONTROL LEVER, IDLE STOP		Shutoff solenoid	
Rated speed rpm	: 200	Volt	: 12
Del. quantity		OVERFLOW QUANTITY	
cm ³ /1000 strokes	: 53.0	Rated speed rpm	: 2150
Tolerance		Aneroid pressure	
cm ³ /1000 strokes	: 3.0	hPa	: 1000
Shutoff solenoid		Overflow quantity	
Volt	: 12	ccm/10s	: 97.2
<hr/> INJECTION-PUMP TEST SPECIFICATIONS		Tolerance	
TIMING DEVICE CHARACTERISTIC		ccm/10s	: 41.6
Rated speed rpm	: 2000	Check tolerance	
Aneroid pressure		ccm/10s	: 41.6
hPa	: 1000	Shutoff solenoid	
SV travel mm	: 6.5	Volt	: 12
Tolerance mm	: 0.4	Rated speed rpm	: 500
Check		Aneroid pressure	
tolerance mm	: 0.7	hPa	: 1000
Shutoff solenoid		Overflow quantity	
Volt	: 12	ccm/10s	: 62.5
Rated speed rpm	: 900	Tolerance	
Aneroid pressure		ccm/10s	: 20.8
hPa	: 1000	Check tolerance	
SV travel mm	: 1.2	ccm/10s	: 20.8
Tolerance mm	: 0.4	Shutoff solenoid	
		Volt	: 12
DELIVERY AND BREAKAWAY CHARACTERISTIC			
Rated speed rpm	: 2575		
Aneroid pressure			
hPa	: 1000		
Del. quantity			
cm ³ /1000 strokes	: 14.0		

Tolerance		Aneroid pressure	
cm ³ /1000 strokes	: 2.0	hPa	: 1000
Check tolerance		Del. quantity	
cm ³ /1000S.	: 4.0	cm ³ /1000 strokes	: 52.0
Shutoff solenoid		Tolerance	
Volt	: 12	cm ³ /1000 strokes	: 1.0
Rated speed rpm	: 2375	Check tolerance	
Aneroid pressure		cm ³ /1000S.	: 2.2
hPa	: 1000	Shutoff solenoid	
Del. quantity		Volt	: 12
cm ³ /1000 strokes	: 39.0	Rated speed rpm	: 500
Tolerance		Aneroid pressure	
cm ³ /1000 strokes	: 5.0	hPa	: 1000
Check tolerance		Del. quantity	
cm ³ /1000S.	: 6.0	cm ³ /1000 strokes	: 48.3
Shutoff solenoid		Tolerance	
Volt	: 12	cm ³ /1000 strokes	: 1.5
Rated speed rpm	: 2750	Check tolerance	
Aneroid pressure		cm ³ /1000S.	: 3.0
hPa	: 1000	Shutoff solenoid	
Del. quantity		Volt	: 12
cm ³ /1000 strokes	: 3.0	Rated speed rpm	: 1250
Tolerance		Aneroid pressure	
cm ³ /1000 strokes	: 3.0	hPa	: 1000
Check tolerance		Del. quantity	
cm ³ /1000S.	: 3.0	cm ³ /1000 strokes	: 54.5
Shutoff solenoid		Tolerance	
Volt	: 12	cm ³ /1000 strokes	: 0.5
Rated speed rpm	: 750	Check tolerance	
Aneroid pressure		cm ³ /1000S.	: 2.2
hPa	: 350	Shutoff solenoid	
Volt	: 12	Volt	: 12
LDA/		MECHANICAL SHUTOFF	
HBA stroke mm	: 5,9	Rated speed rpm	: 2000
Del. quantity		Aneroid pressure	
cm ³ /1000 strokes	: 46.0	hPa	: 1000
Tolerance		Del. quantity	
cm ³ /1000 strokes	: 0.5	cm ³ /1000 strokes	: 1.5
Check tolerance		Tolerance	
cm ³ /1000S.	: 3.0	cm ³ /1000 strokes	: 1.5
Shutoff solenoid		Check tolerance	
Volt	: 12	cm ³ /1000S.	: 1.5
Rated speed rpm	: 2150	Shutoff solenoid	
Aneroid pressure		Volt	: 12
hPa	: 1000	ELECTR. SHUTOFF	
Del. quantity		CONTROL LEVER, IDLE STOP	
cm ³ /1000 strokes	: 50.1	Rated speed rpm	: 400
Tolerance		Del. quantity	
cm ³ /1000 strokes	: 1.0	cm ³ /1000 strokes	: 1.5
Check tolerance		Tolerance	
cm ³ /1000S.	: 2.2	cm ³ /1000 strokes	: 1.5
Shutoff solenoid		Check tolerance	
Volt	: 12	cm ³ /1000S.	: 1.5
Rated speed rpm	: 2000	Shutoff solenoid	

Check tolerance
cm³/1000s. : 1.5

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000s. : 1.5

START TRANSITION

Rated speed rpm : 380
Del. quantity
cm³/1000 strokes : 35.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/
HBA stroke mm : 5,9
Dimension K mm : 3,3
Tolerance mm : ±0,1
Dimension KF mm : 6,0
Tolerance mm : ±0,2
Dimension MS mm : 1,3
Tolerance mm : ±0,2

CONTROL LEVER POSITION
SET

Control lever
position YA mm : 25,8..29,8

Control lever
position YB mm : 73,0..87,0

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.04.95
Test oil : ISO 4113

Part no. : 0 460 494 412
Pump designation : VE4/9F2250R445-8

Customer-spec. information

Customer : PSA
Motor : XUD 9 TF/L
Power KW : 67.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1500
Aneroid pressure hPa : 1000

Setting mm : 4.1
Tolerance mm : 0.2
Shutoff solenoid Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1500
Aneroid pressure hPa : 1000

Setting hPa : 5.7
Tolerance hPa : 0.3
Shutoff solenoid Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1250
Aneroid pressure hPa : 1000

Del. quantity cm³/1000 strokes : 54.5
Tolerance cm³/1000 strokes : 0.5
Spread cm³/1000 strokes : 2.0
Check tolerance cm³/1000S. : 3.0
Shutoff solenoid Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 500
Del. quantity cm³/1000 strokes : 37.0
Tolerance cm³/1000 strokes : 0.5
Shutoff solenoid Volt : 12
Check tolerance cm³/1000S. : 3.0

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 490
Del. quantity cm³/1000 strokes : 8.5
Tolerance cm³/1000 strokes : 0.5

Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2575
Pressure hPa : 1000
Del. quantity cm³/1000 strokes : 14.0
Tolerance cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 150
Del. quantity cm³/1000 strokes : 52.0
Tolerance cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

SET GRADUATED STARTING DELIVERY
CONTROL LEVER, IDLE STOP

Rated speed rpm : 200
Del. quantity cm³/1000 strokes : 53.0
Tolerance cm³/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
Aneroid pressure hPa : 1000

SV travel mm : 6.5
Tolerance mm : 0.4
Check tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 900
Aneroid pressure hPa : 1000

SV travel mm : 1.2
Tolerance mm : 0.4

Check tolerance mm : 0.7
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2000
Aneroid pressure hPa : 1000
Supply pump pressure bar : 6.8
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 900
Aneroid pressure hPa : 1000
Supply pump pressure bar : 4.2
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2150
Aneroid pressure hPa : 1000
Overflow quantity ccm/10s : 97.2
Tolerance ccm/10s : 41.6

Check tolerance ccm/10s : 41.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Aneroid pressure hPa : 1000
Overflow quantity ccm/10s : 62.5
Tolerance ccm/10s : 20.8

Check tolerance ccm/10s : 20.8
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2575
Aneroid pressure hPa : 1000
Del. quantity cm³/1000 strokes : 14.0

Tolerance		Aneroid pressure	
cm ³ /1000 strokes	: 2.0	hPa	: 1000
Check tolerance		Del. quantity	
cm ³ /1000S.	: 4.0	cm ³ /1000 strokes	: 52.0
Shutoff solenoid		Tolerance	
Volt	: 12	cm ³ /1000 strokes	: 1.0
Rated speed rpm	: 2375	Check tolerance	
Aneroid pressure		cm ³ /1000S.	: 2.2
hPa	: 1000	Shutoff solenoid	
Del. quantity		Volt	: 12
cm ³ /1000 strokes	: 39.0	Rated speed rpm	: 500
Tolerance		Aneroid pressure	
cm ³ /1000 strokes	: 5.0	hPa	: 1000
Check tolerance		Del. quantity	
cm ³ /1000S.	: 6.0	cm ³ /1000 strokes	: 48.3
Shutoff solenoid		Tolerance	
Volt	: 12	cm ³ /1000 strokes	: 1.5
Rated speed rpm	: 2750	Check tolerance	
Aneroid pressure		cm ³ /1000S.	: 3.0
hPa	: 1000	Shutoff solenoid	
Del. quantity		Volt	: 12
cm ³ /1000 strokes	: 3.0	Rated speed rpm	: 1250
Tolerance		Aneroid pressure	
cm ³ /1000 strokes	: 3.0	hPa	: 1000
Check tolerance		Del. quantity	
cm ³ /1000S.	: 3.0	cm ³ /1000 strokes	: 54.5
Shutoff solenoid		Tolerance	
Volt	: 12	cm ³ /1000 strokes	: 0.5
Rated speed rpm	: 750	Check tolerance	
Aneroid pressure		cm ³ /1000S.	: 2.2
hPa	: 350	Shutoff solenoid	
Volt	: 12	Volt	: 12
<hr/>			
LDA/		MECHANICAL SHUTOFF	
HBA stroke mm	: 5,9	Rated speed rpm	: 2000
Del. quantity		Aneroid pressure	
cm ³ /1000 strokes	: 46.0	hPa	: 1000
Tolerance		Del. quantity	
cm ³ /1000 strokes	: 0.5	cm ³ /1000 strokes	: 1.5
Check tolerance		Tolerance	
cm ³ /1000S.	: 3.0	cm ³ /1000 strokes	: 1.5
Shutoff solenoid		Check tolerance	
Volt	: 12	cm ³ /1000S.	: 1.5
Rated speed rpm	: 2150	Shutoff solenoid	
Aneroid pressure		Volt	: 12
hPa	: 1000	<hr/>	
Del. quantity		ELECTR. SHUTOFF	
cm ³ /1000 strokes	: 50.1	CONTROL LEVER, IDLE STOP	
Tolerance		Rated speed rpm	: 400
cm ³ /1000 strokes	: 1.0	Del. quantity	
Check tolerance		cm ³ /1000 strokes	: 1.5
cm ³ /1000S.	: 2.2	Tolerance	
Shutoff solenoid		cm ³ /1000 strokes	: 1.5
Volt	: 12		
Rated speed rpm	: 2000		

Check tolerance
cm³/1000s. : 1.5

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000s. : 1.5

START TRANSITION

Rated speed rpm : 380
Del. quantity
cm³/1000 strokes : 35.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/
HBA stroke mm : 5,9
Dimension K mm : 3,3
Tolerance mm : ±0,1
Dimension KF mm : 6,0
Tolerance mm : ±0,2
Dimension MS mm : 1,3
Tolerance mm : ±0,2

CONTROL LEVER POSITION
SET

Control lever
position YA mm : 25,8..29,8

Control lever
position YB mm : 68,0..82,0

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 23.10.95
Test oil : ISO 4113

Part no. : 0 460 494 428
Pump designation : VE4/9F2250R445-0

Customer-spec. information

Customer : PSA
Motor : XUD 9 TE-L;

TEST BENCH REQUIREMENTS

Calibrating-oil

return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test Lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1500
Aneroid pressure hPa : 1000
Setting mm : 4.1
Tolerance mm : 0.2
Shutoff solenoid Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1500
Aneroid pressure hPa : 1000
Setting hPa : 5.7
Tolerance hPa : 0.3
Shutoff solenoid Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1250
Aneroid pressure hPa : 1000
Del. quantity cm³/1000 strokes : 54.5
Tolerance cm³/1000 strokes : 0.5
Spread cm³/1000 strokes : 2.0
Check tolerance cm³/1000s. : 3.0
Shutoff solenoid Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 500
Del. quantity cm³/1000 strokes : 37.0
Tolerance cm³/1000 strokes : 0.5
Shutoff solenoid Volt : 12
Check tolerance cm³/1000s. : 3.0

HOUSING-FIXED IDLE SPRING
RESIDUAL QUANTITY SETTING

Rated speed rpm : 490
Del. quantity cm³/1000 strokes : 8.5
Tolerance cm³/1000 strokes : 0.5
Shutoff solenoid Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2575
 Pressure hPa : 1000
 Del. quantity cm³/1000 strokes : 14.0
 Tolerance cm³/1000 strokes : 2.0
 Shutoff solenoid Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 150
 Del. quantity cm³/1000 strokes : 52.0
 Tolerance cm³/1000 strokes : 15.0
 Shutoff solenoid Volt : 12

SET GRADUATED STARTING DELIVERY
 CONTROL LEVER, IDLE STOP

Rated speed rpm : 200
 Del. quantity cm³/1000 strokes : 53.0
 Tolerance cm³/1000 strokes : 3.0
 Shutoff solenoid Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
 Aneroid pressure hPa : 1000
 SV travel mm : 6.5
 Tolerance mm : 0.4
 Check tolerance mm : 0.7
 Shutoff solenoid Volt : 12

Rated speed rpm : 900
 Aneroid pressure hPa : 1000
 SV travel mm : 1.2
 Tolerance mm : 0.4
 Check tolerance mm : 0.7

Shutoff solenoid Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2000
 Aneroid pressure hPa : 1000
 Supply pump pressure bar : 6.8
 Tolerance hPa : 0.3
 Shutoff solenoid Volt : 12

Rated speed rpm : 900
 Aneroid pressure hPa : 1000
 Supply pump pressure bar : 4.2
 Tolerance hPa : 0.3
 Shutoff solenoid Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2150
 Aneroid pressure hPa : 1000
 Overflow quantity ccm/10s : 97.2
 Tolerance ccm/10s : 41.6

Check tolerance ccm/10s : 41.6
 Shutoff solenoid Volt : 12

Rated speed rpm : 500
 Aneroid pressure hPa : 1000
 Overflow quantity ccm/10s : 62.5
 Tolerance ccm/10s : 20.8

Check tolerance ccm/10s : 20.8
 Shutoff solenoid Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2575
 Aneroid pressure hPa : 1000
 Del. quantity cm³/1000 strokes : 14.0
 Tolerance cm³/1000 strokes : 2.0

Check tolerance
cm³/1000S. : 4.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2375
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 39.0
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 6.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2750
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 3.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 750
Aneroid pressure
hPa : 350

LDA/
HBA stroke mm : 5,9
Del. quantity
cm³/1000 strokes : 46.0
Tolerance
cm³/1000 strokes : 0.5
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2150
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 51.0
Tolerance
cm³/1000 strokes : 1.0
Check tolerance
cm³/1000S. : 2.2
Shutoff solenoid
Volt : 12

Rated speed rpm : 2000
Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 52.0
Tolerance
cm³/1000 strokes : 1.0
Check tolerance
cm³/1000S. : 2.2
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 48.3
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 1250
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 54.5
Tolerance
cm³/1000 strokes : 0.5
Check tolerance
cm³/1000S. : 2.2
Shutoff solenoid
Volt : 12

MECHANICAL SHUTOFF

Rated speed rpm : 2000
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5
Shutoff solenoid
Volt : 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000s. : 1.5

START TRANSITION

Rated speed rpm : 380
Del. quantity
cm³/1000 strokes : 35.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/
HBA stroke mm : 5,9
Dimension K mm : 3,3
Tolerance mm : +0,1
Dimension KF mm : 6,0
Tolerance mm : +0,2
Dimension MS mm : 1,3
Tolerance mm : +0,2

CONTROL LEVER POSITION SET

Control lever
position YA mm : 28,8..32,8

Control lever
position YB mm : 68,0..82,0

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.09.92
Test oil : ISO 4113

Part no. : 0 460 494 310
Pump designation : VE4/9F2150R474

Customer-spec. information

Customer : PSA
Motor : XUD11ATE-L BVM

TEST BENCH REQUIREMENTS

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder assembly : 1 688 901 022

Opening pressure bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 0,3
Tolerance mm : $\pm 0,02$
Outlet : A

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250
Aneroid pressure hPa : 1000
Setting mm : 2.5
Tolerance mm : 0.2
Shutoff solenoid Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Aneroid pressure hPa : 1000
Setting hPa : 5.3
Tolerance hPa : 0.3
Shutoff solenoid Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1250
Aneroid pressure hPa : 1000
Del. quantity cm³/1000 strokes : 61.5
Tolerance cm³/1000 strokes : 0.5
Spread cm³/1000 strokes : 2.5
Check tolerance cm³/1000S. : 2.5
Shutoff solenoid Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 500
Del. quantity cm³/1000 strokes : 43.0
Tolerance cm³/1000 strokes : 0.5
Spread cm³/1000 strokes : 2.5
Shutoff solenoid Volt : 12
Check tolerance cm³/1000S. : 2.5
Check tolerance cm³/1000S. : 2.5

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 550
Del. quantity cm³/1000 strokes : 3.0

Tolerance
cm³/1000 strokes : 0.5
Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2250
Pressure hPa : 1000
Del. quantity
cm³/1000 strokes : 52.0
Tolerance
cm³/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 75.0
Tolerance
cm³/1000 strokes : 5.0
Shutoff solenoid
Volt : 12

SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP

Rated speed rpm : 200
Del. quantity
cm³/1000 strokes : 77.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
Aneroid pressure
hPa : 1000
SV travel mm : 5.9
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000
SV travel mm : 1.3

Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2000
Aneroid pressure
hPa : 1000
Supply pump
pressure bar : 7.4
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000
Supply pump
pressure bar : 4.6
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2000
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6
Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Overflow quantity
ccm/10s : 62.5
Tolerance
ccm/10s : 20.8

Check tolerance
ccm/10s : 20.8
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2250
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 52.0
Tolerance
cm³/1000 strokes : 3.0

Check tolerance		Shutoff solenoid	
cm ³ /1000S.	: 4.0	Volt	: 12
Shutoff solenoid		Rated speed rpm	: 500
Volt	: 12	Aneroid pressure	
Rated speed rpm	: 2400	hPa	: 1000
Aneroid pressure		Del. quantity	
hPa	: 1000	cm ³ /1000 strokes	: 61.5
Del. quantity		Tolerance	
cm ³ /1000 strokes	: 37.0	cm ³ /1000 strokes	: 1.5
Check tolerance		Check tolerance	
cm ³ /1000S.	: 4.0	cm ³ /1000S.	: 2.5
Shutoff solenoid		Shutoff solenoid	
Volt	: 12	Volt	: 12
Rated speed rpm	: 2700	Rated speed rpm	: 1250
Aneroid pressure		Aneroid pressure	
hPa	: 1000	hPa	: 1000
Del. quantity		Del. quantity	
cm ³ /1000 strokes	: 8.0	cm ³ /1000 strokes	: 61.5
Tolerance		Tolerance	
cm ³ /1000 strokes	: 3.0	cm ³ /1000 strokes	: 0.5
Check tolerance		Check tolerance	
cm ³ /1000S.	: 4.0	cm ³ /1000S.	: 2.3
Shutoff solenoid		Shutoff solenoid	
Volt	: 12	Volt	: 12
Rated speed rpm	: 750	<hr/>	
Aneroid pressure		MECHANICAL SHUTOFF	
hPa	: 400	Rated speed rpm	: 2000
Del. quantity		Aneroid pressure	
cm ³ /1000 strokes	: 56.5	hPa	: 1000
Tolerance		Del. quantity	
cm ³ /1000 strokes	: 0.5	cm ³ /1000 strokes	: 1.5
Check tolerance		Tolerance	
cm ³ /1000S.	: 3.0	cm ³ /1000 strokes	: 1.5
Shutoff solenoid		Check tolerance	
Volt	: 12	cm ³ /1000S.	: 1.5
Rated speed rpm	: 2000	Shutoff solenoid	
Aneroid pressure		Volt	: 12
hPa	: 1000	<hr/>	
Del. quantity		ELECTR. SHUTOFF	
cm ³ /1000 strokes	: 56.5	CONTROL LEVER, IDLE STOP	
Tolerance		Rated speed rpm	: 325
cm ³ /1000 strokes	: 1.5	Del. quantity	
Check tolerance		cm ³ /1000 strokes	: 1.5
cm ³ /1000S.	: 2.3	Tolerance	
Shutoff solenoid		cm ³ /1000 strokes	: 1.5
Volt	: 12	Check tolerance	
Rated speed rpm	: 1000	cm ³ /1000S.	: 1.5
Aneroid pressure		<hr/>	
hPa	: 1000	FULL-LOAD STOP CONTROL LEVER	
Del. quantity		Rated speed rpm	: 325
cm ³ /1000 strokes	: 62.0	Del. quantity	
Tolerance		cm ³ /1000 strokes	: 1.5
cm ³ /1000 strokes	: 1.5		
Check tolerance			
cm ³ /1000S.	: 2.5		

Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5

MICROSWITCH
SET

mm : 0,8..3,0
: ARF 12,0

IDLE DELIVERY

Rated speed rpm : 375
Del. quantity
cm³/1000 strokes : 8.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

End of test-specification sheet

EXHAUST-GAS RECIRCULATION

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : 0.5
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 325
Del. quantity
cm³/1000 strokes : 40.5
Tolerance
cm³/1000 strokes : 3.5
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : ±0,1
Dimension KF mm : 5,4
Tolerance mm : ±0,2
Dimension MS mm : 1,1
Tolerance mm : ±0,2

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.09.92
Test oil : ISO 4113

Part no. : 0 460 494 313
Pump designation : VE4/9F2150R474-1

Customer-spec. information

Customer : PSA
Motor : XUD11ATE-L/BVA

TEST BENCH REQUIREMENTS

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder assembly : 1 688 901 022

Opening pressure bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 0,3
Tolerance mm : $\pm 0,02$
Outlet : A

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250
Aneroid pressure hPa : 1000
Setting mm : 2.5
Tolerance mm : 0.2
Shutoff solenoid Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Aneroid pressure hPa : 1000

Setting hPa : 5.3
Tolerance hPa : 0.3
Shutoff solenoid Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1250
Aneroid pressure hPa : 1000
Del. quantity cm³/1000 strokes : 61.5
Tolerance cm³/1000 strokes : 0.5
Spread cm³/1000 strokes : 2.5
Check tolerance cm³/1000S. : 2.5
Shutoff solenoid Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 500
Del. quantity cm³/1000 strokes : 43.0
Tolerance cm³/1000 strokes : 0.5
Spread cm³/1000 strokes : 2.5
Shutoff solenoid Volt : 12
Check tolerance cm³/1000S. : 2.5
Check tolerance cm³/1000S. : 2.5

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 550
Del. quantity cm³/1000 strokes : 3.0

Tolerance
cm³/1000 strokes : 0.5
Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2250
Pressure hPa : 1000
Del. quantity
cm³/1000 strokes : 52.0
Tolerance
cm³/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 75.0
Tolerance
cm³/1000 strokes : 5.0
Shutoff solenoid
Volt : 12

SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP

Rated speed rpm : 200
Del. quantity
cm³/1000 strokes : 77.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
Aneroid pressure
hPa : 1000

SV travel mm : 5.9
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000

SV travel mm : 1.3

Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2000
Aneroid pressure
hPa : 1000
Supply pump
pressure bar : 7.4
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000
Supply pump
pressure bar : 4.6
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2000
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6
Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Overflow quantity
ccm/10s : 62.5
Tolerance
ccm/10s : 20.8
Check tolerance
ccm/10s : 20.8
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2250
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 52.0
Tolerance
cm³/1000 strokes : 3.0

Check tolerance cm ³ /1000S.	:	4.0	Shutoff solenoid Volt	:	12
Shutoff solenoid Volt	:	12	Rated speed rpm	:	500
Rated speed rpm	:	2400	Aneroid pressure hPa	:	1000
Aneroid pressure hPa	:	1000	Del. quantity cm ³ /1000 strokes	:	61.5
Del. quantity cm ³ /1000 strokes	:	37.0	Tolerance cm ³ /1000 strokes	:	1.5
Check tolerance cm ³ /1000S.	:	4.0	Check tolerance cm ³ /1000S.	:	2.5
Shutoff solenoid Volt	:	12	Shutoff solenoid Volt	:	12
Rated speed rpm	:	2700	Rated speed rpm	:	1250
Aneroid pressure hPa	:	1000	Aneroid pressure hPa	:	1000
Del. quantity cm ³ /1000 strokes	:	8.0	Del. quantity cm ³ /1000 strokes	:	61.5
Tolerance cm ³ /1000 strokes	:	3.0	Tolerance cm ³ /1000 strokes	:	0.5
Check tolerance cm ³ /1000S.	:	4.0	Check tolerance cm ³ /1000S.	:	2.3
Shutoff solenoid Volt	:	12	Shutoff solenoid Volt	:	12
Rated speed rpm	:	750	<hr/>		
Aneroid pressure hPa	:	400	MECHANICAL SHUTOFF		
Del. quantity cm ³ /1000 strokes	:	56.5	Rated speed rpm	:	2000
Tolerance cm ³ /1000 strokes	:	0.5	Aneroid pressure hPa	:	1000
Check tolerance cm ³ /1000S.	:	3.0	Del. quantity cm ³ /1000 strokes	:	1.5
Shutoff solenoid Volt	:	12	Tolerance cm ³ /1000 strokes	:	1.5
Rated speed rpm	:	2000	Check tolerance cm ³ /1000S.	:	1.5
Aneroid pressure hPa	:	1000	Shutoff solenoid Volt	:	12
Del. quantity cm ³ /1000 strokes	:	56.5	<hr/>		
Tolerance cm ³ /1000 strokes	:	1.5	ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP		
Check tolerance cm ³ /1000S.	:	2.3	Rated speed rpm	:	325
Shutoff solenoid Volt	:	12	Del. quantity cm ³ /1000 strokes	:	1.5
Rated speed rpm	:	1000	Tolerance cm ³ /1000 strokes	:	1.5
Aneroid pressure hPa	:	1000	Check tolerance cm ³ /1000S.	:	1.5
Del. quantity cm ³ /1000 strokes	:	62.0	<hr/>		
Tolerance cm ³ /1000 strokes	:	1.5	FULL-LOAD STOP CONTROL LEVER		
Check tolerance cm ³ /1000S.	:	2.5	Rated speed rpm	:	325
			Del. quantity cm ³ /1000 strokes	:	1.5

Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5

IDLE DELIVERY

Rated speed rpm : 375
Del. quantity
cm³/1000 strokes : 8.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

EXHAUST-GAS RECIRCULATION

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 25.5
Tolerance
cm³/1000 strokes : 0.5
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 325
Del. quantity
cm³/1000 strokes : 40.5
Tolerance
cm³/1000 strokes : 3.5
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : ±0,1
Dimension KF mm : 5,4
Tolerance mm : ±0,2
Dimension MS mm : 1,1
Tolerance mm : ±0,2

MICROSWITCH SET

mm : 0,8...3,0
: ARF 12,0

CONTROL LEVER POSITION SET

Control lever
position YA mm : 34,3..38,3

Control lever
position YB mm : 73,7..88,3

End of test-specification sheet